Franklin Electric

4"/6"/8"/10" HIGH EFFICIENCY SYSTEMS

EMPOWER EFFICIENCY – ELEVATE SAVINGS

Watch the video on Youtube:

Permanent Magnet Technology

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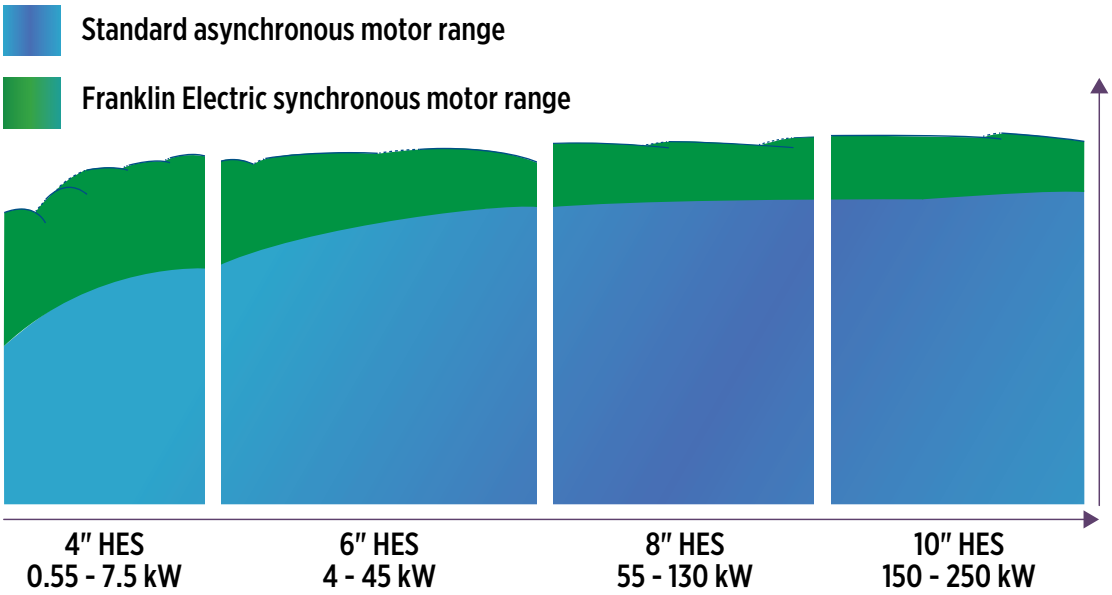
OVERVIEW HIGH EFFICIENCY SYSTEMS

SUPERIOR EFFICIENCY

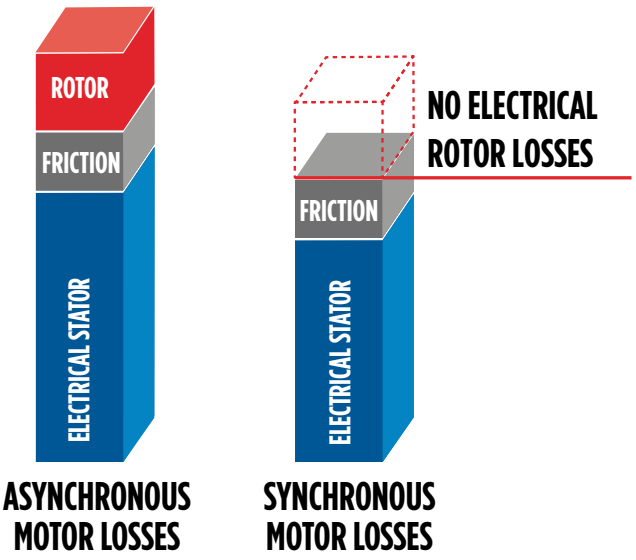
In times of rising energy costs, new systems put more and more emphasis on the best possible efficiency. Here, Franklin Electric has set a new benchmark with its High Efficiency Systems (HES). Compared to standard asynchronous motors, enormous energy savings have been achieved in numerous systems installed worldwide. See the success stories of our customers on ***franklinwater.eu***.



- No electrical rotor losses with permanent magnet motors
- Unmatched efficiency
- Reduced motor current / cable cross-section
- Synchronous speed (no slip)
- Excellent partial load behaviour (Reduced stock levels)
- Less temperature heat rise

The electrical rotor losses of a PM motor are eliminated, resulting in a significant improvement in efficiency. In addition, the PM motor has a lower weight, a reduced length and requires lower Amps to run at the same pump load.

Overall electrical and mechanical losses of a submersible motor



OVERVIEW HIGH EFFICIENCY SYSTEMS

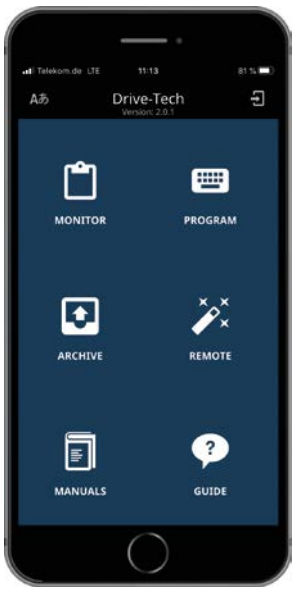
SYSTEM SOLUTION

One-stop shop and perfectly matching components guarantee first-class performance/efficiency

- Synchronous submersible motor
- Variable frequency drive
- Matching output filter (> 230 V)
- Submersible pump (optional)

EASY INSTALLATION & SUPPORT

- Operation with grid or solar supply
- Easy and fast commissioning due to initial configuration wizard
- Remote control and real-time monitoring via Mobile App
- Remote assistance / Trouble shooting from the Franklin Electric support team



SELECTION TOOL

To find the right system, please use the Franklin Electric Pump Selector on *fele-selector.com.*

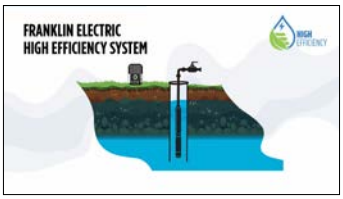
FRANKLIN ELECTRIC PUMP SELECTOR

OVERVIEW HIGH EFFICIENCY SYSTEMS

Energy savings with the permanent magnet motor technology

The key factor for energy savings and superior efficiency is the permanent magnet technology of the motor. Instead of a short-circuit induction type rotor, the high efficiency motor contains a permanent magnet rotor design with buried magnets and magnetic core segments.

Of course, the PM motor also has all the advantages of standard Franklin motors, such as Franklin Electric's proven StatorSHIELD encapsulation system in the 4" and 6" motors with its encapsulated windings, or the hydrodynamic liquid-lubricated bearings and Kingsbury thrust bearings that provide maintenance-free operation.



Click to view the video about cost savings of Franklin Electric High Efficiency Systems

SandFighter® sealing system

with SiC mechanical seal and sand slinger (6-12")

StatorSHIELD™ - Franklin encapsulation system

Franklin Electric encapsulated motors are equipped with hermetically-sealed windings. The stator resin mechanically supports the winding and provides fast heat dissipation.

Hydrodynamic liquid lubricated radial bearings

100% maintenance free operation for all Franklin Electric encapsulated and rewindable motors

Permanent Magnet Technology

Motor rotors are equipped with permanent magnets that eliminate rotor losses thus significantly reducing motor current and heat rise.

Kingsbury type thrust bearing

for 100 % maintenance free operation

Pressure-equalizing diaphragm

NEMA mounting design

Standard NEMA dimensions for all products 4" - 8"

10" motors with double flange mounting design according to industry standards

Best class winding wires in rewindable motors

The rewindable motors are equipped with best class winding wires. The windings can easily be replaced. The Franklin motors are factory filled with Franklin's FES non-toxic water soluble fill solution.

OVERVIEW HIGH EFFICIENCY SOLAR SYSTEMS

SYSTEM SOLUTION SOLAR

- Synchronous submersible motor
- Submersible pump (optional)
- Variable frequency drive
- Matching output filter (> 220 V)

- **Perfectly matched components guarantee first-class performance and efficiency**
- **Direct DC feeding, AC and DC power source compatible**
- **Suitable for the use in remote areas and harsh environments**
- **Robust Electronics enclosure designs**

Maximum system performance through MPPT algorithm

- **The special Franklin Electric MPPT algorithm for borehole applications maximizes the system performance.**

The solar system must be carefully sized to achieve the desired system performance. In addition to solar irradiance, this depends on the number of solar panels and how well the solar drive controls motor and pump.

4" Solar Voltage Boost (up to 2.2 kW)

- **Sizing in power rather than voltage**
- **Less panels, more water respectively**
- **Reduction of required Solar panels**
- **Saving of investments and installation work**

To generate the required voltage level to operate the system at full speed, enough solar panels need to be connected in series. With changing weather conditions, the voltage can drop, causing the system to immediately reduce pump speed to keep running. This reduces the amount of water pumped, but not just linearly. Due to pump affinity laws, the pump head or pressure is reduced squared, which then leads to a further reduction in water flow as it runs at a different pump operating point.

The Franklin Electric High Efficiency Solar system avoids dead head (zero flow) situation, when the pump is still operating, but it's not generating enough head to overcome a certain level. With the lower energy consumption of the High Efficiency System, there is an additional safety reserve to pump more water, or for a longer time period.

4"CT HIGH EFFICIENCY SYSTEM

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

- High-efficiency motor for unmatched efficiency / energy savings
- Excellent partial load behaviour (SKU reduction)
- Due to the high motor efficiency, amps are significantly reduced, which might lead to smaller drop lead cross size and thus cost saving
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Power factor corrected input (No power compensation needed)

EASY INSTALLATION

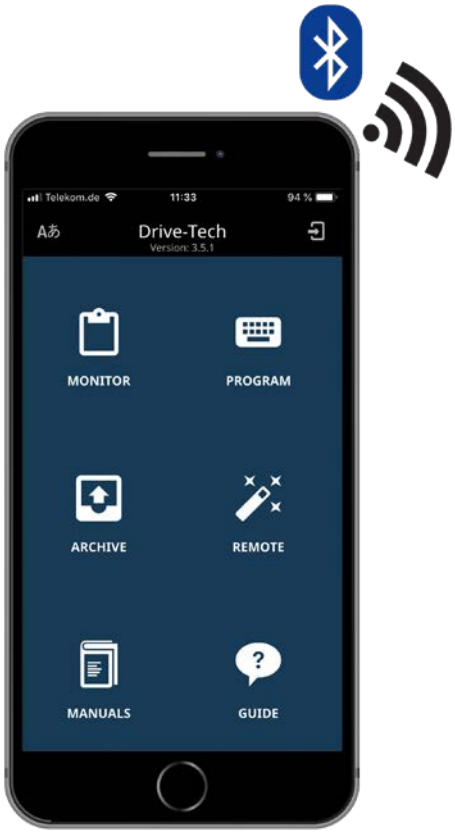
- Easy system commissioning due to integrated start-up wizard with tailored pre settings

INCREASED LIFETIME

- Incorporated Soft start and protection features (increased lifetime, no additonal investment)
- Speed control (Optimum aggregate operation - pump matches system any time)

UP-TO-DATE CONNECTIVITY

- Factory-featured with Bluetooth 4.0 Connectivity
- Remote control and maintenance via Mobile App



FULLY SUPPORTED

- Fully supported by the Technical Support Professionals and Field Service Engineers

APPLICATIONS

4"CT HIGH EFFICIENCY SYSTEM

SPECIFICATION

- motor range:
  1.1 / 2.2 / 3.0 / 4.0 / 5.5 / 7.5 kW (100 Hz - 3000 rpm)
  1.2 / 2.5 / 3.4 / 4.6 / 8.6 kW (120 Hz - 3600 rpm)
- System Power Supply: 220 - 400 V ± 10 %
- System Supply Frequency: 50 Hz - 60 Hz ± 2 %
- Nominal ambient temperature: 30 °C, electronics: 50 °C (> 40 °C with derating)
- Motor installation orientation: vertical / horizontal (shaft end heightened)
- Protection motor: IP68, insulation class B
  drive: IP66
  filter: IP00
- 220/230 V kits without additional output filter

OPTIONS

- Special Voltages
- Higher-graded material: 316SS
- Matching output filters in IP00/23/54 (400V)
- VFD in IP20
- Solar

SYSTEM SOLUTION

- 4" encapsulated synchronous submersible NEMA motor
- 4"/6" submersible pump (optional)
- Variable frequency drive
- Matching output filter for 400 V systems

4"CT HIGH EFFICIENCY SYSTEM

HES4 | DRIVE-TECH MINI

High Efficiency PM motor					DrivE-Tech MINI				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
220	2340716721L	4PM-LT-1.1-220-100	3.8	1.1	002149112	DRIVE-TECH MINI 2.011 M/T	5	66	-	-	-	-
220	2340726721L	4PM-LT-2.2-220-100	7	2.2	002149152	DRIVE-TECH MINI 2.015 M/T	7.5	66	-	-	-	-
380	2340626721L	4PM-LT-2.2-380-100	4	2.2	314000162	DRIVE-TECH MINI 4.011 T/T	4	66	002352414	DV/DT FILTER	14	00
380	2340636721L	4PM-LT-3.0-380-100	5.4	3	314000163	DRIVE-TECH MINI 4.022 T/T	6	66	002352414	DV/DT FILTER	14	00
380	2340643421L	4PM-HT-4.0-380-100	7.3	4	314000164	DRIVE-TECH MINI 4.040 T/T	10.5	66	002352414	DV/DT FILTER	14	00
380	2340626721L	4PM-LT-2.2-380-100	4	2.2	314000162	DRIVE-TECH MINI 4.011 T/T	4	66	002347013	SINE WAVE FILTER	14	00
380	2340636721L	4PM-LT-3.0-380-100	5.4	3	314000163	DRIVE-TECH MINI 4.022 T/T	6	66	002347013	SINE WAVE FILTER	14	00
380	2340643421L	4PM-HT-4.0-380-100	7.3	4	314000164	DRIVE-TECH MINI 4.040 T/T	10.5	66	002347013	SINE WAVE FILTER	14	00

HES4 | DRIVE-TECH COMPACT

High Efficiency PM motor					DrivE-Tech COMPACT				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
220	2340736721L	4PM-LT-3.0-220-100	9.4	3	002152120	DRIVETECH COMP 2.030 M/T	12.5	66	-	-	-	-
220	2340743421L	4PM-HT-4.0-220-100	13	4	002152180	DRIVETECH COMP 2.040 M/T	18.5	66	-	-	-	-
380	2340663421L	4PM-HT-7.5-380-100	13.1	7.5	002150140	DRIVE-TECH COMP 4.055 T/T	14	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2340663421L	4PM-HT-7.5-380-100	13.1	7.5	002150140	DRIVE-TECH COMP 4.055 T/T	14	66	002347013	SINE WAVE FILTER	14	00

HES4 | DRIVE-TECH

High Efficiency PM motor					DrivE-Tech				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
220	2340716721L	4PM-LT-1.1-220-100	3.8	1.1	002149115	DRIVE-TECH 2.015 M/T	7	65	-	-	-	-
220	2340726721L	4PM-LT-2.2-220-100	7	2.2	002149115	DRIVE-TECH 2.015 M/T	7	65	-	-	-	-
220	2340736721L	4PM-LT-3.0-220-100	9.4	3	002149131	DRIVE-TECH 2.030 M/T	11	65	-	-	-	-

HES4 | DRIVE-TECH MINI SOLAR

High Efficiency PM motor					DrivE-Tech MINI Solar				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
220	2340716721L	4PM-LT-1.1-220-100	3.8	1.1	314000166	DRIVE-TECH MINI SOLAR 2.011 MP	5	66	-	-	-	-
220	2340726721L	4PM-LT-2.2-220-100	7	2.2	314000167	DRIVE-TECH MINI SOLAR 2.015 MP	7.5	66	-	-	-	-

HES4 | DRIVE-TECH COMPACT SOLAR

High Efficiency PM motor					DrivE-Tech COMPACT Solar				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2340643421L	4PM-HT-4.0-220-100	7.3	4	002150141	DRIVE-TECH COMP SOLAR 4.055 MP	14	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2340663421L	4PM-HT-7.5-380-100	13.1	7.5	002150141	DRIVE-TECH COMP SOLAR 4.055 MP	14	66	002150FC0	DTC DV/DT FILTER CARD	32	66

6" CT HIGH EFFICIENCY SYSTEM

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

- High-efficiency motor for unmatched efficiency / energy savings
- Excellent partial load behaviour (SKU reduction)
- Due to the high motor efficiency, amps are significantly reduced, which might lead to smaller drop lead cross size and thus cost saving
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Power factor corrected input (No power compensation needed)
- Reduced motor length and weight

EASY INSTALLATION

- Easy system set-up due to selectable application presets, integrated start-up assistant and mobile app support

INCREASED LIFETIME

- Incorporated Soft start and protection features (increased lifetime, no additonal investment)
- Speed control (Optimum aggregate operation - pump matches system any time)

CONNECTIVITY

- Bluetooth Communication, ModBus (RS485 and Ethernet), BACnet and optional communication cards

FULLY SUPPORTED

- Fully supported by the Technical Support Professionals and Field Service Engineers

SYSTEM SOLUTION

- 6" encapsulated synchronous submersible NEMA motor
- Variable frequency drive
- Matching output filter
- Submersible pump (optional)

6" CT HIGH EFFICIENCY SYSTEM

STANDARD SPECIFICATION

- motor range: 4.0 – 11.0 / 13.0 – 22.0 / 26.0 - 45.0 kW (100 Hz - 3000 rpm)
  4.6 – 12.7 / 15.0 – 25.0 / 30.0 - 51.7 kW (120 Hz - 3600 rpm)
- System Power Supply: 380-400 V / 460 V ± 10 % (50/60 Hz)
- System Supply Frequency: 50/60 Hz ± 6 %
- Motor installation orientation: vertical / horizontal (shaft end heightened)
- Protection motor: IP68, insulation class F
  drive: IP00 / IP20 / IP66 (IP54 on request)
  filter: IP00/54 (plug-in filter card for DrivE-Tech COMPACT)

OPTIONS

- Pressure transducers (see accessories)
- Wall mounting kit - 002150WK0 (DrivE-Tech COMPACT)
- Plug-in filter card - 002150FC0 (DrivE-Tech COMPACT)
- Retrofitable PT 100 temperature sensor

APPLICATIONS

6" CT HIGH EFFICIENCY SYSTEM

HES6 | DRIVE-TECH COMPACT

High Efficiency PM motor					DrivE-Tech COMPACT				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2360801461	6R2-PM-11-380-100-304SS	14.1	7.5	002150140	DRIVE-TECH COMP 4.055	14	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360801461	6R2-PM-11-380-100-304SS	20.5	11	002150250	DRIVE-TECH COMP 4.110	25	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	25.3	13	002150300	DRIVE-TECH COMP 4.150	30	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	28.3	15	002150300	DRIVE-TECH COMP 4.150	30	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	002150380	DRIVE-TECH COMP 4.185	38	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	002150440	DRIVE-TECH COMP 4.220	44	66	002352490	DV/DT FILTER	90	00
380	2360801461	6R2-PM-11-380-100-304SS	14.1	7.5	002150140	DRIVE-TECH COMP 4.055	14	66	002347013	SINE WAVE FILTER	14	00
380	2360801461	6R2-PM-11-380-100-304SS	20.5	11	002150250	DRIVE-TECH COMP 4.110	25	66	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	25.3	13	002150300	DRIVE-TECH COMP 4.150	30	66	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	28.3	15	002150300	DRIVE-TECH COMP 4.150	30	66	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	002150380	DRIVE-TECH COMP 4.185	38	66	002347012	SINE WAVE FILTER	115	00
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	002150440	DRIVE-TECH COMP 4.220	44	66	002347012	SINE WAVE FILTER	115	00
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	002150380	DRIVE-TECH COMP 4.185	38	66	314005115	SINE WAVE FILTER	38	54
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	002150440	DRIVE-TECH COMP 4.220	44	66	314005139	SINE WAVE FILTER	46	54

HES6 | DRIVE-TECH

High Efficiency PM motor					DrivE-Tech				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149300	DRIVE-TECH 4.300	65	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149300	DRIVE-TECH 4.300	65	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149370	DRIVE-TECH 4.370	75	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149550	DRIVE-TECH 4.550	118	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149300	DRIVE-TECH 4.300	65	54	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149300	DRIVE-TECH 4.300	65	54	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149370	DRIVE-TECH 4.370	75	54	314005118	DV/DT FILTER	88	54
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149550	DRIVE-TECH 4.550	118	54	314005124	DV/DT FILTER	140	54
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149300	DRIVE-TECH 4.300	65	54	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149300	DRIVE-TECH 4.300	65	54	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149370	DRIVE-TECH 4.370	75	54	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149550	DRIVE-TECH 4.550	118	54	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149300	DRIVE-TECH 4.300	65	54	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149300	DRIVE-TECH 4.300	65	54	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149370	DRIVE-TECH 4.370	75	54	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149550	DRIVE-TECH 4.550	118	54	214005127	SINE WAVE FILTER	140	54

6" CT HIGH EFFICIENCY SYSTEM

HES6 | X-DRIVE

High Efficiency PM motor					CERUS X-Drive				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2360801461	6R2-PM-11-380-100-304SS	14.1	7.5	CXD-018A-4V-K	X-DRIVE 018A KIT	18	20	002352414	DV/DT FILTER	14	00
380	2360801461	6R2-PM-11-380-100-304SS	20.5	11	CXD-024A-4V-K	X-DRIVE 024A KIT	24	20	002352432	DV/DT FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	25.3	13	CXD-032A-4V-K	X-DRIVE 032A KIT	32	20	002352432	DV/DT FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	28.3	15	CXD-032A-4V-K	X-DRIVE 032A KIT	32	20	002352432	DV/DT FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	CXD-038A-4V-K	X-DRIVE 038A KIT	38	20	002352490	DV/DT FILTER	90	00
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	CXD-045A-4V-K	X-DRIVE 045A KIT	45	20	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	CXD-073A-4V-K	X-DRIVE 073A KIT	73	20	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	90	45	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	CXD-073A-4V-K	X-DRIVE 073A KIT	73	20	314005118	DV/DT FILTER	88	54
380	2360861461	6R2-PM-45-380-100-304SS	90	45	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	314005124	DV/DT FILTER	140	54
380	2360801461	6R2-PM-11-380-100-304SS	14.1	7.5	CXD-018A-4V-K	X-DRIVE 018A KIT	18	20	002347013	SINE WAVE FILTER	14	00
380	2360801461	6R2-PM-11-380-100-304SS	20.5	11	CXD-024A-4V-K	X-DRIVE 024A KIT	24	20	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	25.3	13	CXD-032A-4V-K	X-DRIVE 032A KIT	32	20	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	28.3	15	CXD-032A-4V-K	X-DRIVE 032A KIT	32	20	002347011	SINE WAVE FILTER	32	00
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	CXD-038A-4V-K	X-DRIVE 038A KIT	38	20	002347012	SINE WAVE FILTER	115	00
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	CXD-045A-4V-K	X-DRIVE 045A KIT	45	20	002347012	SINE WAVE FILTER	115	00
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	CXD-038A-4V-K	X-DRIVE 038A KIT	38	20	314005115	SINE WAVE FILTER	38	54
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	CXD-045A-4V-K	X-DRIVE 045A KIT	45	20	314005139	SINE WAVE FILTER	46	54
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	CXD-073A-4V-K	X-DRIVE 073A KIT	73	20	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	90	45	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	002347012	SINE WAVE FILTER	115	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	CXD-060A-4V-K	X-DRIVE 060A KIT	60	20	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	CXD-073A-4V-K	X-DRIVE 073A KIT	73	20	314005116	SINE WAVE FILTER	72	54
380	2360861461	6R2-PM-45-380-100-304SS	90	45	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	214005127	SINE WAVE FILTER	140	54

6" CT HIGH EFFICIENCY SYSTEM

HES6 | DRIVE-TECH COMPACT SOLAR

High Efficiency PM motor					DrivE-Tech COMPACT Solar				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2360801461	6R2-PM-11-380-100-304SS	14.1	7.5	002150141	DRIVE-TECH COMP 4.055	14	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360801461	6R2-PM-11-380-100-304SS	20.5	11	002150251	DRIVE-TECH COMP 4.110	25	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	25.3	13	002150301	DRIVE-TECH COMP 4.150	30	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	28.3	15	002150301	DRIVE-TECH COMP 4.150	30	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	34.1	18.5	002150381	DRIVE-TECH COMP 4.185	38	66	002150FC0	DTC DV/DT FILTER CARD	32	66
380	2360841461	6R2-PM-22-380-100-304SS	40.7	22	002150441	DRIVE-TECH COMP 4.220	44	66	002352490	DV/DT FILTER	90	00

HES6 | DRIVE-TECH SOLAR

High Efficiency PM motor					DrivE-Tech Solar				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149A09	DRIVE-TECH 4.300 SOLAR MP	65	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149A09	DRIVE-TECH 4.300 SOLAR MP	65	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149A10	DRIVE-TECH 4.370 SOLAR MP	75	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	002352490	DV/DT FILTER	90	00
380	2360861461	6R2-PM-45-380-100-304SS	51.2	26	002149A09	DRIVE-TECH 4.300 SOLAR MP	65	54	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	57.8	30	002149A09	DRIVE-TECH 4.300 SOLAR MP	65	54	314005112	DV/DT FILTER	62	54
380	2360861461	6R2-PM-45-380-100-304SS	71.3	37	002149A10	DRIVE-TECH 4.370 SOLAR MP	75	54	314005118	DV/DT FILTER	88	54
380	2360861461	6R2-PM-45-380-100-304SS	90	45	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	314005124	DV/DT FILTER	140	54

8" REW HIGH EFFICIENCY SYSTEM

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

HIGH EFFICIENCY

- High-efficiency motor for unmatched efficiency / energy savings
- Excellent partial load behaviour (SKU reduction)
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Power factor corrected input (No power compensation needed)
- Reduced motor length and weight

INCREASED LIFETIME

- Incorporated Soft start and protection features (increased lifetime, no additonal investment)
- Speed control (Optimum aggregate operation - pump matches system any time)

FULLY SUPPORTED

- Easy system set-up due to selectable application presets, integrated start-up assistant and mobile app support
- Fully supported by the Technical Support Professionals and Field Service Engineers

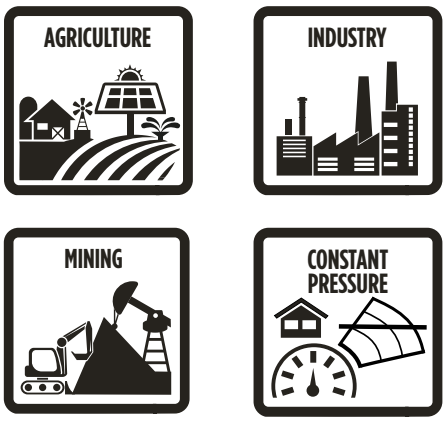
CONNECTIVITY

- Communication ModBus (RS485 and Ethernet, optional Profibus)

SYSTEM SOLUTION

- 8" rewindable synchronous submersible NEMA motor
- Variable frequency drive
- Matching output filter
- Submersible pump (optional)

APPLICATIONS



8" REW HIGH EFFICIENCY SYSTEM

STANDARD SPECIFICATION

- motor range: 75 / 100 / 130 kW (100 Hz - 3000 rpm), 86.3 / 115 / 150 kW (120 Hz - 3600 rpm)
- System Power Supply: 400 / 460 V ± 10 % (50/60 Hz)
- System Supply Frequency: 50 - 60 Hz ± 6%
- Nominal ambient temperature: 30 °C, electronics: 50 °C (> 40 °C with derating)
- Motor installation orientation: vertical / horizontal (shaft end heightened)
- Protection: motor: IP68, insulation class Y
  drive: IP20/00
  filter: IP00/54

OPTIONS

- Special Voltages
- Higher-graded material: 316SS, 904L
- Retrofitable PT 100 temperature sensor
- dV/dt and Sinus output filters in IP54 and IP00

8" REW HIGH EFFICIENCY SYSTEM

HES8 | X-DRIVE

High Efficiency PM motor					CERUS X-Drive				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2630145311	8PM-75-400-100	91	55	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	002352490	DV/DT FILTER	90	00
380	2630145311	8PM-75-400-100	112	67	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005137	DV/DT FILTER	105	00
380	2630145311	8PM-75-400-100	128	75	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005130	DV/DT FILTER	140	00
380	2630145311	8PM-75-400-100	91	55	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	112	67	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	128	75	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	143	83	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005130	DV/DT FILTER	140	00
380	2630165311	8PM-100-400-100	162	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	178	100	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	143	83	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	162	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005125	DV/DT FILTER	205	54
380	2630165311	8PM-100-400-100	178	100	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	153	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	186	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	225	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	002352533	DV/DT FILTER	330	00
380	2630185311	8PM-130-400-100	153	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	186	100	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	225	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005126	DV/DT FILTER	310	54
380	2630145311	8PM-75-400-100	91	55	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	002347012	SINE WAVE FILTER	115	00
380	2630145311	8PM-75-400-100	112	67	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	002347012	SINE WAVE FILTER	115	00
380	2630145311	8PM-75-400-100	128	75	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005121	SINE WAVE FILTER	140	00
380	2630145311	8PM-75-400-100	91	55	CXD-091A-4V-K	X-DRIVE 091A KIT	91	20	002347020	SINE WAVE FILTER	180	54
380	2630145311	8PM-75-400-100	112	67	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	002347020	SINE WAVE FILTER	180	54
380	2630145311	8PM-75-400-100	128	75	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	002347020	SINE WAVE FILTER	180	54
380	2630165311	8PM-100-400-100	143	83	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	314005121	SINE WAVE FILTER	140	00
380	2630165311	8PM-100-400-100	162	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005122	SINE WAVE FILTER	205	00
380	2630165311	8PM-100-400-100	178	100	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005122	SINE WAVE FILTER	205	00
380	2630165311	8PM-100-400-100	143	83	CXD-150A-4V-K	X-DRIVE 150A KIT	150	20	002347020	SINE WAVE FILTER	180	54
380	2630165311	8PM-100-400-100	162	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005128	SINE WAVE FILTER	205	54
380	2630165311	8PM-100-400-100	178	100	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	153	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005122	SINE WAVE FILTER	205	00
380	2630185311	8PM-130-400-100	186	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005122	SINE WAVE FILTER	205	00
380	2630185311	8PM-130-400-100	225	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005123	SINE WAVE FILTER	310	00
380	2630185311	8PM-130-400-100	153	93	CXD-180A-4V-K	X-DRIVE 180A KIT	180	20	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	186	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	225	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005129	SINE WAVE FILTER	310	54

8" REW HIGH EFFICIENCY SYSTEM

HES8 | DRIVE-TECH

High Efficiency PM motor					DrivE-Tech				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2630145311	8PM-75-400-100	91	55	002149550	DRIVE-TECH 4.550	118	54	002352490	DV/DT FILTER	90	00
380	2630145311	8PM-75-400-100	112	67	002149550	DRIVE-TECH 4.550	118	54	314005130	DV/DT FILTER	140	00
380	2630145311	8PM-75-400-100	128	75	002149750	DRIVE-TECH 4.750	158	54	314005130	DV/DT FILTER	140	00
380	2630145311	8PM-75-400-100	91	55	002149550	DRIVE-TECH 4.550	118	54	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	112	67	002149550	DRIVE-TECH 4.550	118	54	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	128	75	002149750	DRIVE-TECH 4.750	158	54	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	143	83	002149750	DRIVE-TECH 4.750	158	54	314005130	DV/DT FILTER	140	00
380	2630165311	8PM-100-400-100	162	93	002149900	DRIVE-TECH 4.900	185	54	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	178	100	002151100	DRIVE-TECH 4.1100	215	54	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	143	83	002149750	DRIVE-TECH 4.750	158	54	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	162	93	002149900	DRIVE-TECH 4.900	185	54	314005125	DV/DT FILTER	205	54
380	2630165311	8PM-100-400-100	178	100	002151100	DRIVE-TECH 4.1100	215	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	153	93	002149750	DRIVE-TECH 4.750	158	54	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	186	110	002151100	DRIVE-TECH 4.1100	215	54	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	225	130	002151320	DRIVE-TECH 4.1320	268	54	002352533	DV/DT FILTER	330	00
380	2630185311	8PM-130-400-100	153	93	002149750	DRIVE-TECH 4.750	158	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	186	110	002151100	DRIVE-TECH 4.1100	215	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	225	130	002151320	DRIVE-TECH 4.1320	268	54	314005126	DV/DT FILTER	310	54
380	2630145311	8PM-75-400-100	91	55	002149550	DRIVE-TECH 4.550	118	54	002347012	SINE WAVE FILTER	115	00
380	2630145311	8PM-75-400-100	112	67	002149550	DRIVE-TECH 4.550	118	54	002347012	SINE WAVE FILTER	115	00
380	2630145311	8PM-75-400-100	128	75	002149750	DRIVE-TECH 4.750	158	54	314005121	SINE WAVE FILTER	140	00
380	2630145311	8PM-75-400-100	91	55	002149550	DRIVE-TECH 4.550	118	54	002347020	SINE WAVE FILTER	180	54
380	2630145311	8PM-75-400-100	112	67	002149550	DRIVE-TECH 4.550	118	54	002347020	SINE WAVE FILTER	180	54
380	2630145311	8PM-75-400-100	128	75	002149750	DRIVE-TECH 4.750	158	54	002347020	SINE WAVE FILTER	180	54
380	2630165311	8PM-100-400-100	143	83	002149750	DRIVE-TECH 4.750	158	54	314005121	SINE WAVE FILTER	140	00
380	2630165311	8PM-100-400-100	162	93	002149900	DRIVE-TECH 4.900	185	54	314005122	SINE WAVE FILTER	205	00
380	2630165311	8PM-100-400-100	178	100	002151100	DRIVE-TECH 4.1100	215	54	314005122	SINE WAVE FILTER	205	00
380	2630165311	8PM-100-400-100	143	83	002149750	DRIVE-TECH 4.750	158	54	002347020	SINE WAVE FILTER	180	54
380	2630165311	8PM-100-400-100	162	93	002149900	DRIVE-TECH 4.900	185	54	314005128	SINE WAVE FILTER	205	54
380	2630165311	8PM-100-400-100	178	100	002151100	DRIVE-TECH 4.1100	215	54	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	153	93	002149750	DRIVE-TECH 4.750	158	54	314005122	SINE WAVE FILTER	205	00
380	2630185311	8PM-130-400-100	186	110	002151100	DRIVE-TECH 4.1100	215	54	314005122	SINE WAVE FILTER	205	00
380	2630185311	8PM-130-400-100	225	130	002151320	DRIVE-TECH 4.1320	286	54	314005123	SINE WAVE FILTER	310	00
380	2630185311	8PM-130-400-100	153	93	002149750	DRIVE-TECH 4.750	158	54	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	186	110	002151100	DRIVE-TECH 4.1100	215	54	314005128	SINE WAVE FILTER	205	54
380	2630185311	8PM-130-400-100	225	130	002151320	DRIVE-TECH 4.1320	268	54	314005129	SINE WAVE FILTER	310	54

8" REW HIGH EFFICIENCY SYSTEM

HES8 | DRIVE-TECH SOLAR

High Efficiency PM motor					DrivE-Tech Solar				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2630145311	8PM-75-400-100	91	55	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	002352490	DV/DT FILTER	90	00
380	2630145311	8PM-75-400-100	112	67	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	314005130	DV/DT FILTER	140	00
380	2630145311	8PM-75-400-100	128	75	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005130	DV/DT FILTER	140	00
380	2630145311	8PM-75-400-100	91	55	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	112	67	002149A12	DRIVE-TECH 4.550 SOLAR MP	118	54	314005124	DV/DT FILTER	140	54
380	2630145311	8PM-75-400-100	128	75	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	143	83	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005130	DV/DT FILTER	140	00
380	2630165311	8PM-100-400-100	162	93	002149A14	DRIVE-TECH 4.930 SOLAR MP	198	54	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	178	100	002149A15	DRIVE-TECH 4.1100 SOLAR MP	228	54	314005119	DV/DT FILTER	205	00
380	2630165311	8PM-100-400-100	143	83	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005124	DV/DT FILTER	140	54
380	2630165311	8PM-100-400-100	162	93	002149A14	DRIVE-TECH 4.930 SOLAR MP	198	54	314005125	DV/DT FILTER	205	54
380	2630165311	8PM-100-400-100	178	100	002149A15	DRIVE-TECH 4.1100 SOLAR MP	228	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	153	93	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	186	110	002149A15	DRIVE-TECH 4.1100 SOLAR MP	228	54	314005119	DV/DT FILTER	205	00
380	2630185311	8PM-130-400-100	225	130	002149A16	DRIVE-TECH 4.1320 SOLAR MP	268	54	002352533	DV/DT FILTER	330	00
380	2630185311	8PM-130-400-100	153	93	002149A13	DRIVE-TECH 4.750 SOLAR MP	158	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	186	110	002149A15	DRIVE-TECH 4.1100 SOLAR MP	228	54	314005125	DV/DT FILTER	205	54
380	2630185311	8PM-130-400-100	225	130	002149A16	DRIVE-TECH 4.1320 SOLAR MP	268	54	314005126	DV/DT FILTER	310	54

10" REW HIGH EFFICIENCY SYSTEM

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

HIGH EFFICIENCY

- High-efficiency motor for unmatched efficiency / energy savings
- Excellent partial load behaviour (SKU reduction)
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Power factor corrected input (No power compensation needed)
- Reduced motor length and weight

INCREASED LIFETIME

- Incorporated Soft start and protection features (increased lifetime, no additonal investment)
- Speed control (Optimum aggregate operation - pump matches system any time)

CONNECTIVITY

- Communication ModBus (RS485 and Ethernet)

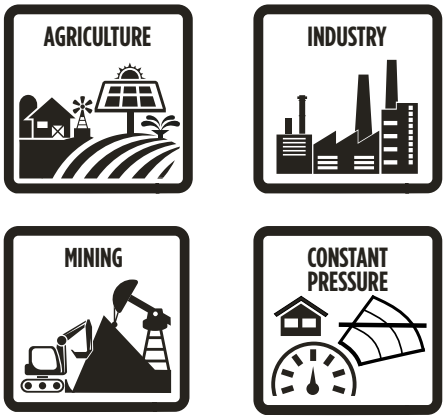
FULLY SUPPORTED

- Easy system set-up due to selectable application presets, integrated start-up assistant and mobile app support
- Fully supported by the Technical Support Professionals and Field Service Engineers

SYSTEM SOLUTION

- 10" rewindable synchronous submersible motor
- Variable frequency drive
- Matching output filter
- Submersible pump (optional)

APPLICATIONS



10" REW HIGH EFFICIENCY SYSTEM

STANDARD SPECIFICATION

- motor range: 190 - 250 kW (100 Hz - 3000 rpm), 230 - 290 kW (120 Hz - 3600 rpm)
- System Power Supply:400 / 460 V ±10 % (50/60 Hz)
- System Supply Frequency: 50 Hz - 60 Hz ±2 %
- Nominal ambient temperature: motor: 30 °C, electronics: 50 °C (> 40 °C with derating)
- Motor installation orientation: vertical / horizontal (shaft end heightened) - 250 kW motors may not be installed horizontally
- MPPT algorithm maximizes system performance
- Protection:
  - motor: IP68, insulation class Y
  - drive: IP00
  - filter: IP00

OPTIONS

- Special Voltages
- Higher-graded material: 316SS, 904L
- Sinus output filters
- Retrofitable PT 100 temperature sensor

10" REW HIGH EFFICIENCY SYSTEM

HES10 | X-DRIVE

High Efficiency PM motor					Cerus X-Drive				output filter			
V_N [V]	part no.	description	I_N [A]	P_N [kW]	part no.	description	I_N [A]	IP	part no.	description	I_N [A]	IP
380	2640255311	10PM- 150-400-100	199.5	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005119	DV/DT FILTER	205	00
380	2640255311	10PM- 150-400-100	236	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	002352533	DV/DT FILTER	330	00
380	2640255311	10PM- 150-400-100	274	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	002352533	DV/DT FILTER	330	00
380	2640255311	10PM- 150-400-100	199.5	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005125	DV/DT FILTER	205	54
380	2640255311	10PM- 150-400-100	236	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005126	DV/DT FILTER	310	54
380	2640255311	10PM- 150-400-100	274	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005126	DV/DT FILTER	310	54
380	2640285311	10PM-200-400-100	284	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	002352533	DV/DT FILTER	330	00
380	2640285311	10PM-200-400-100	354	185	CXD-370A-4V-K	X-DRIVE 370A KIT	370	20	002352550	DV/DT FILTER	500	00
380	2640285311	10PM-200-400-100	389	200	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	002352550	DV/DT FILTER	500	00
380	2640285311	10PM-200-400-100	284	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005126	DV/DT FILTER	310	54
380	2640295311	10PM- 250-400-100	377	200	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	002352550	DV/DT FILTER	500	00
380	2640295311	10PM- 250-400-100	423	220	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	002352550	DV/DT FILTER	500	00
380	2640295311	10PM- 250-400-100	497	250	CXD-530A-4V-K	X-DRIVE 530A KIT	530	20	002352550	DV/DT FILTER	500	00
380	2640255311	10PM- 150-400-100	199.5	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005122	SINE WAVE FILTER	205	00
380	2640255311	10PM- 150-400-100	236	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005123	SINE WAVE FILTER	310	00
380	2640255311	10PM- 150-400-100	274	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005123	SINE WAVE FILTER	310	00
380	2640255311	10PM- 150-400-100	199.5	110	CXD-220A-4V-K	X-DRIVE 220A KIT	220	20	314005128	SINE WAVE FILTER	205	54
380	2640255311	10PM- 150-400-100	236	130	CXD-260A-4V-K	X-DRIVE 260A KIT	260	20	314005129	SINE WAVE FILTER	310	54
380	2640255311	10PM- 150-400-100	274	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005129	SINE WAVE FILTER	310	54
380	2640285311	10PM-200-400-100	284	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005123	SINE WAVE FILTER	310	00
380	2640285311	10PM-200-400-100	354	185	CXD-370A-4V-K	X-DRIVE 370A KIT	370	20	314005168	SINE WAVE FILTER	460	00
380	2640285311	10PM-200-400-100	389	200	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	314005168	SINE WAVE FILTER	460	00
380	2640285311	10PM-200-400-100	284	150	CXD-310A-4V-K	X-DRIVE 310A KIT	310	20	314005129	SINE WAVE FILTER	310	54
380	2640295311	10PM- 250-400-100	377	200	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	314005168	SINE WAVE FILTER	460	00
380	2640295311	10PM- 250-400-100	423	220	CXD-460A-4V-K	X-DRIVE 460A KIT	460	20	314005168	SINE WAVE FILTER	460	00
380	2640295311	10PM- 250-400-100	497	250	CXD-530A-4V-K	X-DRIVE 530A KIT	530	20	314005169	SINE WAVE FILTER	590	00

4" ENCAPSULATED PERMANENT MAGNET MOTOR

SPECIFICATION

- 4" NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ - Franklin encapsulation system
- Factory filled with Franklin's FES93 motor fill solution
- Max. storage temperature 0°C - + 50°C
- Liquid lubricated radial bearings and High capacity Kingsbury type thrust bearing for 100 % maintenance free operation
- Field replaceable lead using Franklin's exclusive Water Bloc technology
- Pressure-equalizing diaphragm
- Protection IP68 and insulation class B Frequency of starts: 20 starts/ hour (with min. 3 minutes resting time), equally distributed
- All motors with factory installed leads 1.50 / 2.50 m
- Vertical and horizontal operation, shaftend heightend

STAINLESS STEEL 304

STAINLESS STEEL 316

STANDARD SPECIFICATION

- Ratings:
  0.55 - 3.0 kW; Thrust load 4 kN
  3.0 - 7.5 kW; Thrust load 6.5 kN
- Voltage: 220/380 V (100/120 Hz)
- Voltage tolerance U_N: ± 10 %
- Nominal ambient temperature: 30 °C with 0.08 m/s cooling flow

3~ 304SS / 316SS MODEL NUMBER 220 V / 100 & 120 HZ

P_N [kW]	U_N [V]	Thrust F [N]	f [Hz]	Digit 1 - 6	Digit 7 - 10	
					Standard 304SS	Standard 316SS
					Single pack with lead*	Single pack with lead*
0.55 - 1.1	220	4000	100	234 071	6721L	6821L
			120	234 051		
1.1 - 2.2	220	4000	100	234 072	6721L	6821L
			120	234 052		
2.2 - 3.0	220	4000	100	234 073	6721L	6821L
			120	234 053		
3.0 - 4.0	220	6500	100	234 074	3421L	3521L
			120	234 054		

* Motors with factory-installed cable: ≤ 2.2 kW: 1.50 m; ≥ 3 kW: 2.50 m
** PM motors must be operated with a frequency converter (VFD)

For detailed information on this PM motor: see pages 64-71

4" 3~ ENCAPSULATED PERMANENT MAGNET MOTOR

3~ 304SS / 316SS MODEL NUMBER 380 V / 100 HZ

P_N [kW]	U_N [V]	Thrust F [N]	f [Hz]	Digit 1 - 6	Digit 7 - 10	
					Standard 304SS	Standard 316SS
					Single pack with lead*	Single pack with lead*
1.1 - 2.2	380	4000	100	234 062	6721L	6821L
2.2 - 3.0	380	4000	100	234 063	6721L	6821L
3.0 - 4.0	380	6500	100	234 064	3421L	3521L
4.0 - 7.5	380	6500	100	234 066	3421L	3521L

* lead lengths motors "L": with pre-mounted cable 1.50 m / 6500N - 2.50 m

MOTOR PERFORMANCE DATA 220 V / 100 HZ

Motor model no.	P_N [kW]	Thrust F [N]	U_N [V]	n [min-1]	I_N [A]	I_A / I_N [A]	η [%]	cos phi	T_N [Nm]	T_A / T_N *
234 071 ****	0,55	4000	220	3000	1,8	1	85,1	0,95	1,8	1
	0,75				2,4		85,6	0,97	2,4	
	1,1				3,8		83,5	0,99	3,5	
234 072 ****	1,1	4000	220	3000	3,4	1	86,4	0,96	3,5	1
	1,5				4,8		88,0	0,97	4,8	
	2,2				7,0		87,0	0,99	7,0	
234 073 ****	2,2	4000	220	3000	6,9	1	90,3	0,96	7,0	1
	3,0				9,4		90,2	0,97	9,6	
234 074 ****	3,0	6500	220	3000	10,2	1	90,7	0,94	9,6	1
	3,7				12,0		91,0	0,96	11,8	
	4,0				13,0		91,0	0,97	12,7	

MOTOR PERFORMANCE DATA 220 V / 120 HZ

Motor model no.	P_N [kW]	Thrust F [N]	U_N [V]	n [min-1]	I_N [A]	I_A / I_N [A]	η [%]	cos phi	T_N [Nm]	T_A / T_N *
234 051 ****	0,55	4000	220	3600	2,0	1	85,1	0,95	1,8	1
	0,75				2,6		85,6	0,97	2,4	
	1,1				3,8		83,5	0,99	3,5	
234 052 ****	1,1	4000	220	3600	4,1	1	86,4	0,94	3,5	1
	1,5				5,0		88,0	0,95	4,8	
	2,2				7,1		87,0	0,96	7,0	
234 053 ****	2,2	4000	220	3600	6,9	1	90,3	0,96	7,0	1
	3,0				9,4		90,2	0,97	9,6	
234 054 ****	3,0	6500	220	3600	9,7	1	90,7	0,94	9,6	1
	3,7				11,5		91,0	0,96	11,8	
	4,0				12,5		91,0	0,97	12,7	

Performance data are based on measurements with Franklin Electric original equipment.
* Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

MOTOR PERFORMANCE DATA 380 V / 100 HZ

Motor model no.	P_N [kW]	Thrust F [N]	U_N [V]	n [min-1]	I_N [A]	I_A / I_N [A]	η [%]	cos phi	T_N [Nm]	T_A / T_N *
234 062 ****	1,1	4000	380	3000	2,2	1	86.4	0.95	3.5	1
	1.5				2.8		88.0	0.96	4.8	
	2,2				4,0		87.0	0.97	7.0	
234 063 ****	2,2	4000	380	3000	4,0	1	89.6	0.95	7.0	1
	3,0				5.4		90.0	0.97	9.6	
234 064 ****	3,0	6500	380	3000	5.7	1	89.7	0.96	9.6	1
	3.7				6.7		90.2	0.97	11.8	
	4,0				7.3		90.2	0.98	12.7	
234 066 ****	4,0	6500	380	3000	7.3	1	90.7	0.95	12.7	1
	5,5				9.7		91.0	0.95	17,5	
	7,5				13.1		90.5	0.96	23.9	

Performance data are based on measurements with Franklin Electric original equipment.
* Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

MOTOR CABEL/ ELECTRICAL CONNECTIONS 3~ MOTORS

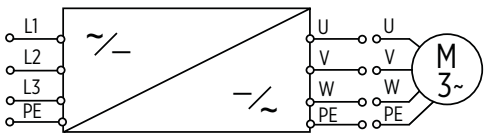
Motor cable*			
0,55 - 7,5 kW			
Ø [mm]	B [mm]	B1 [mm]	H [mm]
3 x 1,5 + 1G 1,5	16,8	10,7	5,0

L [m]	304SS / 316SS
1,50	310 113 501
2,50	310 113 502
5	310 113 505
10	310 113 510
15	310 113 515
20	310 113 520

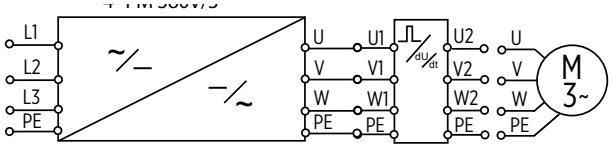
* Cable design for operation in water; for operation in air, please consult Franklin Electric.

Connection plan

230V / 3~



380V / 3~



U	V	W	PE
black (BK)	grey (GY)	brown (BN)	yellow/green (YE/GN)

6" 3~ ENCAPSULATED PERMANENT MAGNET MOTOR

WATER WELL WW CI PC / 304SS

STAINLESS STEEL 304

STAINLESS STEEL 316

SAND FIGHTER

FEATURES & BENEFITS

- Double-flange NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ - Franklin encapsulation system
- Factory filled with Franklin's FES91 motor fill solution
- Pressure-equalizing diaphragm, spring pre-loaded
- Field replaceable lead using Franklin's exclusive Water Bloc technology
- Sand Fighter™ sealing system with SiC/SiC mechanical seal and sand slinger
- High efficiency electrical design for low operation costs
- Drinking water approvals

STANDARD SPECIFICATION

- Permanent magnet technology
- Up to 15 points (21 %) improved motor effciency*
- Investment payback of less than two years
- Ratings: 4 - 45 kW, 380 V (100 Hz)
- Thrust load: 15.5 kN: 4 - 22 kW, 27.5 kN: 26 - 45 kW
- Voltage Tolerance U_N: ±10 %
- Nominal speed: 3000 rpm (100 Hz), 3600 rpm (120 Hz)
- Nominal ambient temperature: 30 °C (≤ 22 kW: with 0.16 m/s cooling flow, ≥ 26 kW: with 0.5 m/s cooling flow)
- Protection IP68, Insulation class F
- Standard motors: WW (Water well), stator: 304SS, castings: CI Powder coated
- Frequency of starts: 20 starts/ hour (with min. 3 minutes resting time), equally distributed
- Vertical and horizontal operation, shaftend heightend
- Rotation counter clock wise facing shaft end (rotation reversible)
- All motors with factory installed leads

OPTIONS

- Special Voltages
- Higher-graded material: 316SS
- 45 kN High Thrust version (Standard in 22 kW and 30 kW)
- Retrofitable PT 100 temperature sensor (see page 200 Motor Accessories)
- HighTemp drop cable

3~ DOL MODEL NUMBER 380 V / 100 HZ

P_N [kW]	U_N [V]	Thrust F [N]	Digit 1 - 6	Digit 7 - 10		
				WW**	304SS	Standard 316SS
				Single pack with pre-installed lead*	Single pack with pre-installed lead*	Single pack with pre-installed lead*
4 - 11	380	15.500	236 080	9561	1461	1561
13 - 22	380	15.500	236 084	9561	1461	1561
26 - 45	380	27.500	236 086	9561	1461	1561

* with 4 m motor short lead

** WW (Water well)- Stator 304SS / Castings - CI Powder coated (see material description in the submersible motor catalog)

6" 3~ ENCAPSULATED PERMANENT MAGNET MOTOR

3~ MOTOR PERFORMANCE DATA 380 V / 100 HZ

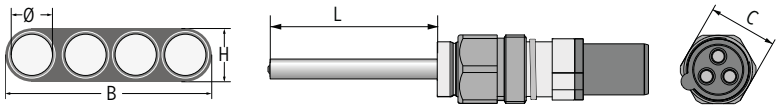
Motor model no.	P_N [kW]	Thrust F [N]	U_N [V]	n [min^{-1}]	I_N [A]	I_A / I_N	η [%]	cos phi	T_N [Nm]	T_A / T_N
236 080 xxxx	4	15500	380	3000	9.2	1	87.1	0.95	12.7	1
	5.5				11.0	1	89.8	0.95	17.5	1
	7.5				14.1	1	90.9	0.95	23.9	1
236 080 xxxx	9.3	15500	380	3000	17.2	1	91.2	0.95	29.6	1
	11				20.5	1	90.9	0.95	35.0	1
236 084 xxxx	13	15500	380	3000	25.3	1	91.4	0.95	41.4	1
	15				28.3	1	91.8	0.95	47.7	1
236 084 xxxx	18.5	15500	380	3000	34.1	1	92.1	0.95	58.9	1
236 084 xxxx	22	15500	380	3000	40.7	1	92.0	0.95	70.0	1
236 086 xxxx	26	27500	380	3000	51.2	1	92.3	0.95	82.8	1
	30				57.8	1	92.5	0.95	95.5	1
236 086 xxxx	37	27500	380	3000	71.3	1	92.1	0.95	117.8	1
236 086 xxxx	45	27500	380	3000	90.0	1	90.8	0.95	143.2	1

MOTOR CABEL/ ELECTRICAL CONNECTIONS 3~ MOTORS

Motorkabel*

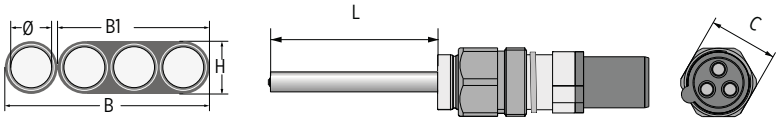
4 - 22 kW

Ø [mm^2]	C [mm]	B [mm]	H [mm]	L [m]	WW	316SS
4G4	32	19	7	4	310 125 004	310 125 504



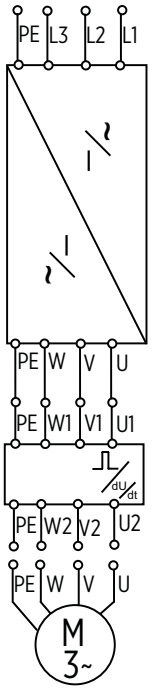
26 - 45 kW

Ø [mm^2]	C [mm]	B [mm]	B1 [mm]	B1 [mm]	H [mm]	WW	316SS
3x8,4+1G8,4	32	29,5	19,5	19,5	8,9	310 145 004	310 145 504



* Cable design for operation in water; for operation in air, please consult Franklin Electric.

Connection plan



U	V	W	PE
black (BK)	grey (GY)	brown (BN)	yellow/green (YE/GN)

8" REWINDABLE PERMANENT MAGNET MOTOR

WATER WELL WW CI PC / 304SS | STAINLESS STEEL 316 | STAINLESS STEEL 904L

SAND FIGHTER

BENEFITS & FEATURES

- Motors for operation with Variable frequency drive (VFD)
- 8" double flange NEMA mounting design
- High efficiency electrical design for low operation costs
- Sand Fighter™ sealing system with SIC mechanical seal and sand slinger
- Factory filled with Franklin's FES93 motor fill solution
- Drinking water approvals
- Stainless steel splined shaft
- Liquid lubricated radial bearings and High capacity Kingsbury type 45 kN thrust bearing for 100 % maintenance free operation
- Pressure-equalizing diaphragm, spring pre-loaded

STANDARD SPECIFICATION

- Ratings: 75 / 100 / 130 kW (100 Hz - 3000 rpm, 120 Hz - 3600 rpm)
- Max. storage temperature - 15 °C to + 60 °C
- Standard motor with PE2/PA winding insulation
- Nominal ambient temperature: 30 °C with 0.5 m/s cooling flow
- System Supply Voltage: 400 V (100 Hz) / 460 V (120 Hz)
- Voltage Tolerance: ± 10 % U_N
- Protection IP68
- Standard Motor: WW- Water well Design (Stator 304SS / Castings - CI Powder coated)
- Motor protection: DIN 61947-4-1
- Frequency of starts: 10 starts/ hour (with min. 3 minutes resting time), equally distributed
- DOL-start
- All motors with factory installed leads, motor lead length: 6 m
- Motors installation orientation: Vertical / horizontal (shaft end heightened)
- Rotation counter clock wise facing shaft end (rotation reversible)

OPTIONS

- Higher-graded materials: 316SS, 904L
- Special voltages
- Retrofitable PT 100 temperature sensor(see page 202 Motor Accessories)
- Special lead lengths

3~ DOL MODEL NUMBERS 400 V / 100 HZ**

P_N [kW]	400V / 100 Hz WW * Motor model number	400V / 100 Hz 316SS Motor model number	400V / 100 Hz 904L Motor model number
75	263 014 5311	263 014 6311	263 014 7311
100	263 016 5311	263 016 6311	263 016 7311
130	263 018 5311	263 018 6311	263 018 7311

* WW (Water well)- Stator 304SS / Castings - CI Powder coated (see page material description in the submersible motor catalog)
** PM motors are to be operated by Variable frequency drive (VFD)

8" REWINDABLE PERMANENT MAGNET MOTOR

MOTOR PERFORMANCE DATA 400 V / 100 HZ

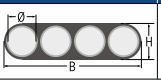
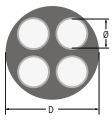
Motor model no.	P_N [kW]	Thrust F [kN]	n_N [min^{-1}]	I_N [A]	I_A/I_N* [A]	η [%]	cos phi	T_N [Nm]	T_A/T_N* [Nm]
263 014 xxxx	45	45	3000	74	1	93.3	0.96	143	1
	55	45	3000	91	1	93.3	0.96	175	1
	67	45	3000	112	1	93.0	0.96	213	1
	75	45	3000	128	1	92.5	0.96	239	1
263 016 xxxx	75	45	3000	129	1	93.5	0.95	239	1
	83	45	3000	143	1	93.3	0.95	264	1
	93	45	3000	162	1	93.0	0.95	296	1
	100	45	3000	178	1	92.7	0.95	319	1
263 018 xxxx	75	45	3000	125	1	93.8	0.97	239	1
	93	45	3000	153	1	93.7	0.97	296	1
	110	45	3000	186	1	93.3	0.97	350	1
	130	45	3000	225	1	92.6	0.96	414	1

MOTOR PERFORMANCE DATA 500 V / 100 HZ

Motor model no.	P_N [kW]	Thrust F [kN]	n_N [min^{-1}]	I_N [A]	I_A/I_N* [A]	η [%]	cos phi	T_N [Nm]	T_A/T_N* [Nm]
263 024 xxxx	45	45	3000	60	1	93.2	0.95	143	1
	55	45	3000	74	1	93.2	0.95	175	1
	67	45	3000	91	1	93.0	0.95	213	1
	75	45	3000	103	1	92.5	0.95	239	1
263 026 xxxx	75	45	3000	105	1	93.5	0.94	239	1
	83	45	3000	116	1	93.3	0.94	264	1
	93	45	3000	131	1	93.2	0.94	296	1
	100	45	3000	143	1	92.9	0.94	319	1
263 028 xxxx	75	45	3000	102	1	93.8	0.96	239	1
	93	45	3000	124	1	93.7	0.96	296	1
	110	45	3000	151	1	93.3	0.96	350	1
	130	45	3000	183	1	92.6	0.96	414	1

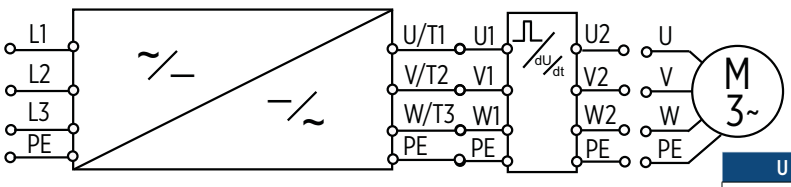
Performance data are based on measurements with Franklin Electric original equipment.
*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

MOTOR CABLE 400 V* DOL

Cable	kW	Ø [mm^2]	B / H [mm]		Lenght [m]	Qty.	Cable model no.	Cable seal kit 304/316 model no.	Cable seal kit 904L model no.
	75	4G16	B	38,0	6	1	308 710 108	308 660 618	308 660 620
			H	12,8					
	100	4G25	D	32	6	1	308 710 140	308 660 633	308 660 634
	130	3RD 1X35 + Ground lead 1x35	D	15,3	6	1	308 710 151	308 660 641	308 660 642

* Cable design for operation in water; for operation in air, please consult Franklin Electric.

CONNECTION PLAN 3~ MOTOR



U	V	W	PE
black (BK)	grey (GY)	brown (BN)	yellow/green (YE/GN)

10" REWINDABLE PERMANENT MAGNET MOTOR

FEATURES & BENEFITS

WATER WELL WW CI PC / 304SS | STAINLESS STEEL 316 | STAINLESS STEEL 904L

SAND FIGHTER

- Double-flange NEMA mounting design
- Factory filled with Franklin's FES93 motor fill solution
- Liquid lubricated radial bearings and High capacity Kingsbury 60 kN type thrust bearing for 100 % maintenance free operation
- Pressure-equalizing diaphragm, spring pre-loaded
- Stainless Steel keyed shaft
- Sand Fighter™ sealing system with SiC/SiC mechanical seal and sand slinger
- Standard motors WW (Water well) - Stator: 304SS / Castings - CI Powder coated
- High efficiency electrical design for low operation costs
- Drinking water approvals

STANDARD SPECIFICATION

- Motor range: 150 - 250 kW (100 Hz - 3000 rpm), 173 - 287 kW (120 Hz - 3600 rpm)
- Max. storage temperature - 15 °C - +60 °C
- Standard motor with PE2/PA winding insulation
- Nominal ambient temperature: 30 °C with 0.5 m/s cooling flow
- System Supply Voltage: 400 V (100 Hz) / 460 V (120 Hz)
- Voltage Tolerance U_N: ±10 %
- Protection IP68
- Motor protection: DIN 61947-4-1
- Frequency of starts: 10 starts/ hour (with min. 3 minutes resting time), equally distributed
- DOL start
- Motor lead length: 6 m
- Motors installation orientation: Vertical / horizontal (shaft end heightened), 250 kW motors may not be installed horizontally
- Rotation counter clock wise facing shaft end (rotation reversible)
- All motors with factory installed leads

OPTIONS

- Special Voltages
- Higher-graded material: 316SS, 904L
- Retrofitable PT 100 temperature sensor (see page 202 Motor Accessories)
- Special lead lengths

3~ DOL MODEL NUMBERS 400 V / 100 HZ**

P_N [kW]	U_N [V]	400V / 100 Hz WW * Motor model number	400V / 100 Hz 316SS Motor model number	400V / 100 Hz 904L Motor model number
150	400	264 025 5311	264 025 6311	264 025 7311
200	400	264 028 5311	264 028 6311	264 028 7311
250	400	264 029 5311	264 029 6311	264 029 7311

* WW motor - brackets Cast Iron Powder coated (see page material description in the submersible motor catalog)
** PM motors are to be operated by Variable frequency drive (VFD)

10" REWINDABLE PERMANENT MAGNET MOTOR

MOTOR PERFORMANCE DATA 400 V / 100 HZ

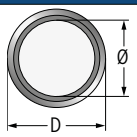
motor model no.	P_N [kW]	Thrust F [kN]	n_N [min^{-1}]	I_N [A]	I_A/I_N* [A]	η [%]	cos phi	T_N [Nm]	T_A/T_N* [Nm]
264 025 xxxx	110	60	3000	199,5	1	93,0	0,93	353	1
	130	60	3000	236,1	1	93,0	0,93	415	1
	150	60	3000	274,0	1	93,0	0,93	478	1
264 028 xxxx	150	60	3000	284	1	94.3	0.95	478	1
	185	60	3000	354	1	94.1	0.96	589	1
	200	60	3000	389	1	93.8	0.96	637	1
264 029 xxxx	200	60	3000	377	1	94.5	0.95	637	1
	220	60	3000	423	1	94.3	0.96	701	1
	250	60	3000	497	1	93.8	0.96	796	1

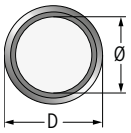
MOTOR PERFORMANCE DATA 460 V / 120 HZ

motor model no.	P_N [kW]	$P_{max.}$ [kW]	Thrust F [kN]	n_N [min^{-1}]	I_{MAX} [A]	I_A/I_{MAX}* [A]	η [%]	cos phi	T_N [Nm]	T_A/T_N* [Nm]
264 025 xxxx	110	127	60	3600	199,5	1	93,0	0,93	353	1
	130	150	60	3600	236,1	1	93,0	0,93	415	1
	150	173	60	3600	274,0	1	93,0	0,93	478	1
264 028 xxxx	150	173	60	3600	284	1	94,3	0,95	478	1
	185	213	60	3600	354	1	94,1	0,96	589	1
	200	230	60	3600	389	1	93,6	0,96	637	1
264 029 xxxx	200	230	60	3600	377	1	94,5	0,95	637	1
	220	253	60	3600	423	1	94,3	0,96	701	1
	250	287	60	3600	497	1	93,6	0,96	796	1

Performance data are based on measurements with Franklin Electric original equipment.
*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

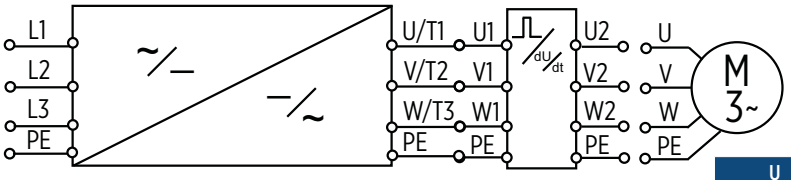
MOTOR CABLE 400 V* DOL

Cable	P_N [kW]	U_N [V]	ø [mm^2]	D [mm]	Lenght [m]	Qty.	Motor cable kit (3 single leads)	Cable seal kit model no.
	all ratings	400	3 x 1X70	20,7	6	1	308 711 100	308 660 740

Ground lead (optional)	Ø [mm^2]	D [mm]	Lenght [m]	Qty.	Cable model no.
	1G35	15,3	6	1	308 056 060

* Cable design for operation in water; for operation in air, please consult Franklin Electric.

CONNECTION PLAN 3~ MOTOR



U	V	W	PE
black (BK)	grey (GY)	brown (BN)	yellow/green (YE/GN)

VARIABLE FREQUENCY DRIVES

Franklin Electric Variable Frequency Drives are designed to work in a wide range of submersible and surface pumping applications. They are offering great flexibilty, state of the art motor protection, energy savings and enhanced pump speed control while remaining easy to use.

The innovative and reliable design allows multi-purpose use across many industries and key applications such as residential constant water pressure, municipal water supply, agriculture and irrigation, dewatering and mining.

DrivE-Tech MINI

IP66 wall mounted /
Pump mounted drive

DrivE-Tech COMPACT

IP66 wall mounted/
Pump mounted drive

DrivE-Tech

IP66/65/54 wall mounted/
Pump mounted drive

Cerus X-Drive

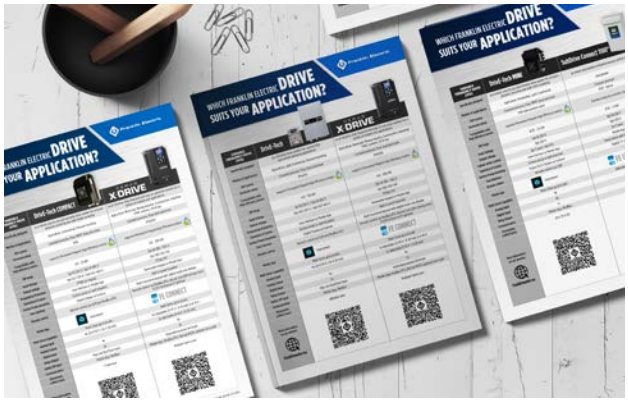
IP20/00 /
Panel mounted drive

DrivE-Tech Series
0.55 - 130 kW

CERUS X-Drive
4.0 - 250 kW

BROCHURES / CATALOGS

Download our drive catalog for further information on **franklinwater.eu.**



Download our comparison sheets from our website **franklinwater.eu.**

VARIABLE FREQUENCY DRIVES

FEATURES & BENEFITS

The DrivE-Tech and Cerus X-Drive are variable frequency drives designed to control and protect three phase asynchronous and permanent magnet synchronous motors in residential, industrial, municipal, and agricultural applications. They are easy to integrate into existing infrastructure or to be used as stand-alone drive modules for individual pumping applications.

- Enhanced pump speed control
- State of the art motor and pump protection features
- Operation of induction type asynchronous motors and permanent magnet synchronous motors
- Wide performance range up to 250 kW
- Compact, innovative and reliable design
- Bluetooth connectivity and Mobile App control
- Remote Support, commissioning, and support
- CE approved

EASY INSTALLATION & SUPPORT

- Intuitive start-up experience with application-specific parameter pre-sets
- Setup/commissioning through user-friendly Mobile App or keypad
- Copy-paste parameter setup between multiple drives through keypad data storage or Mobile App

Unyconnect App for DrivE-Tech Series:

Google Playstore

Apple App Store

FE CONNECT App for X-Drive Series:

Google Playstore

Apple App Store

VARIABLE FREQUENCY DRIVES

MODEL NUMBER CERUS X-DRIVE

drive model no.	drive type	IP	V_{IN} [V]	I_{OUT} [A]	dimensions				weight [kg]	Frame size
					a	b	c	d		
CXD-013A-4V-K	X-Drive 13A	IP	3x380-500	13	130	250		170	3	A
CXD-018A-4V-K	X-Drive 18A	20	3x380-500	18	130	250		170	3	A
CXD-024A-4V-K	X-Drive 24A	20	3x380-500	24	190	320		190	5.5	B
CXD-032A-4V-K	X-Drive 32A	20	3x380-500	32	190	320		190	5.5	B
CXD-038A-4V-K	X-Drive 38A	20	3x380-500	38	190	320		190	5.5	B
CXD-045A-4V-K	X-Drive 45A	20	3x380-500	45	250	400		210	10	C
CXD-060A-4V-K	X-Drive 60A	20	3x380-500	60	250	400		210	10	C
CXD-073A-4V-K	X-Drive 73A	20	3x380-500	73	250	400		210	10	C
CXD-091A-4V-K	X-Drive 91A	20	3x380-500	91	280	500	614	255	27	D0
CXD-110A-4V-K	X-Drive 110A	20	3x380-500	110	280	500	614	255	27	D0
CXD-150A-4V-K	X-Drive 150A	20	3x380-500	150	330	550	688	275	40	D
CXD-180A-4V-K	X-Drive 180A	20	3x380-500	180	330	550	688	275	40	D
CXD-220A-4V-K	X-Drive 220A	20	3x380-500	220	370	589	716	300	65	E
CXD-260A-4V-K	X-Drive 260A	20	3x380-500	260	370	589	716	300	65	E
CXD-310A-4V-K	X-Drive 310A	20	3x380-500	310	420	800	940	300	87	F
CXD-370A-4V-K	X-Drive 370A	20	3x380-500	370	420	800	940	300	87	F
CXD-460A-4V-K	X-Drive 460A	20	3x380-500	460	500	1000	1240	397	135	G
CXD-530A-4V-K	X-Drive 530A	20	3x380-500	530	500	1000	1240	397	135	G

* Optional input filter on request (X-Drive 13A - 73A)

MODEL NUMBER DRIVE-TECH MINI

Drive model no.	drive type	IP	V_{IN} [V]	I_{OUT} [A]	dimensions [mm]	weight [kg]
002149005	DT MINI 2.005 M/T	66	1x220-240	3	150 x 211 x 130	2.5
002149112	DT MINI 2.011 M/T	66	1x220-240	5	150 x 211 x 130	2.5
002149152	DT MINI 2.015 M/T	66	1x220-240	7.5	150 x 211 x 130	2.5
314000170	DT MINI 2.022 M/T	66	1x220-240	8.5	150 x 211 x 130	2.5
314000162	DT MINI 4.011 T/T	66	3x380-460	4	150 x 211 x 130	2.5
314000163	DT MINI 4.022 T/T	66	3x380-460	6	150 x 211 x 130	2.5
314000164	DT MINI 4.040 T/T	66	3x380-460	10.5	150 x 211 x 130	2.5

drive model no.	drive type	IP	V_{IN} [V]	VDC_{IN} [V]	I_{OUT} [A]	dimensions [mm]	weight [kg]
314000165	DT MINI Solar 2.005 M/T	66	1x220-240	400	3	150 x 211 x 130	2.5
314000166	DT MINI Solar 2.011 M/T	66	1x220-240	400	5	150 x 211 x 130	2.5
314000167	DT MINI Solar 2.015 M/T	66	1x220-240	400	7.5	150 x 211 x 130	2.5

VARIABLE FREQUENCY DRIVES

MODEL NUMBER DRIVE-TECH COMPACT

drive model no.	drive model no. PT100	drive type	IP	V_{IN} [V]	I_{OUT} [A]	dimensions [mm]	weight [kg]
002152090	002152092	DT COMPACT 2.022 M/T	66	1x220-240	9.5	248 x 337 x 190	10
002152120	002152122	DT COMPACT 2.030 M/T	66	1x220-240	12.5	248 x 337 x 190	10
002152180	002152182	DT COMPACT 2.040 M/T	66	1x220-240	18.5	248 x 337 x 190	10
002150140	002150142	DT COMPACT 4.055 T/T	66	3x380-460	14	248 x 337 x 190	10
002150180	002150182	DT COMPACT 4.075 T/T	66	3x380-460	18	248 x 337 x 190	10
002150250	002150252	DT COMPACT 4.110 T/T	66	3x380-460	25	248 x 337 x 190	10
002150300	002150302	DT COMPACT 4.150 T/T	66	3x380-460	30	248 x 337 x 190	10
002150380	002150382	DT COMPACT 4.185 T/T	66	3x380-460	38	248 x 337 x 190	10
002150440	002150442	DT COMPACT 4.220 T/T	66	3x380-460	44	248 x 337 x 190	10

MODEL NUMBER DRIVE-TECH COMPACT SOLAR MP

drive model no.	drive type	IP	V_{IN} [V]	I_{OUT} [A]	dimensions [mm]	weight [kg]
002150141	DT COMPACT Solar 4.055 T/T	66	3x380-460	14	248 x 337 x 190	10
002150181	DT COMPACT Solar 4.075 T/T	66	3x380-460	18	248 x 337 x 190	10
002150251	DT COMPACT Solar 4.110 T/T	66	3x380-460	25	248 x 337 x 190	10
002150301	DT COMPACT Solar 4.150 T/T	66	3x380-460	30	248 x 337 x 190	10
002150381	DT COMPACT Solar 4.185 T/T	66	3x380-460	38	248 x 337 x 190	10
002150441	DT COMPACT Solar 4.220 T/T	66	3x380-460	44	248 x 337 x 190	10

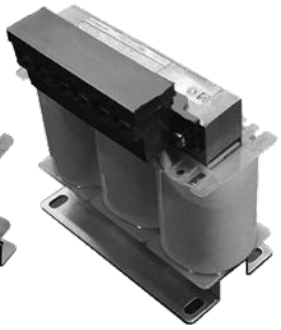
MODEL NUMBER DRIVE-TECH

drive model no.	drive type	IP	V_{IN} [V]	I_{OUT} [A]	dimensions [mm]	weight [kg]	Frame size
002149115	DRIVE-TECH 2.015 M/T 7A - M/M 9A	66	1x220-240	7	180 x 180 x 205	5	1
002149131	DRIVE-TECH 2.030 M/T 11A - M/M9A	66	1x220-240	11	180 x 180 x 205	5	1
002149185	DRIVE-TECH 4.185 T/T 38A	54	3x380-460	38	410 x 680 x 260	40	3
002149220	DRIVE-TECH 4.220 T/T 48A	54	3x380-460	48	410 x 680 x 260	40	3
002149300	DRIVE-TECH 4.300 T/T 65A	54	3x380-460	65	410 x 680 x 260	40	3
002149370	DRIVE-TECH 4.370 T/T 75A	54	3x380-460	75	410 x 680 x 260	40	3
002149450	DRIVE-TECH 4.450 T/T 85A	54	3x380-460	85	410 x 680 x 260	40	3
002149550	DRIVE-TECH 4.550 T/T 118A	54	3x380-460	118	490 x 880 x 380	80	4
002149750	DRIVE-TECH 4.750 T/T 158A	54	3x380-460	158	490 x 880 x 380	80	4
002149900	DRIVE-TECH 4.900 T/T 185A	54	3x380-460	185	490 x 880 x 380	80	4
002151100	DRIVE-TECH 4.1100 T/T 215A	54	3x380-460	215	490 x 880 x 380	80	4
002151320	DRIVE-TECH 4.1320 T/T 268A	54	3x380-460	268	490 x 880 x 380	80	4

OUTPUT FILTER

- A VFD output filter or load reactor acts as an additional impedance between VFD and motor. It protects the motor winding and reduces the voltage stress by decreasing the voltage rise time (dV/dt) and tampering the output voltage waveform of the VFD. Optimizing the VFD output voltage waveform into a more suitable profile prevents the risk of high voltage reflexion caused by long motor cable length.
- Required when using 3x400 V AC induction and permanent magnet motors with VFD
- Use dV/dt output filter for motor cable lengths of 4 - 120 m.
- Use Sinus output filter for motor cable lengths greater than 120 m.
- The size of a dV/dt or Sinus filter must be selected according to the nominal motor current [A]

Sinus output filter



dV/dt output filter

FEATURES & BENEFITS

- For use with 3x400 V AC induction and permanent magnet motors
- Protects motor winding against high voltage peaks and increases lifetime
- Reduces motor noise
- Improves EMC and reduces emissions

DV/DT OUTPUT FILTER

MODEL NO. DV/DT OUTPUT FILTER IP00

filter model no.	Type	IP	$V_{NOMINAL}$ [V]	$I_{NOMINAL}$ [A]	fs [kHz]	Dimensions a x b x c [mm]	weight [kg]
002352414	dV/dt	00	380 - 460	14	4	120 x 67 x 115	2.7
002352432	dV/dt	00	380 - 460	32	4	140 x 75 x 150	3.5
002352490	dV/dt	00	380 - 460	90	4	180 x 120 x 200	8
314005102	dV/dt	00	380 - 460	38	4	155 x 96 x 197	5
314005137	dV/dt	00	380 - 460	105	4	190 x 116 x 238	12
314005130	dV/dt	00	380 - 460	140	4	240 x 139 x 335	14
314005119	dV/dt	00	380 - 460	205	4	240 x 149 x 335	19
002352533	dV/dt	00	380 - 460	330	4	300 x 168 x 256	35
002352550	dV/dt	00	380 - 460	500	4	300 x 224 x 296	40
314005167	dV/dt	00	380 - 460	650	4	300 x 260 x 347	50

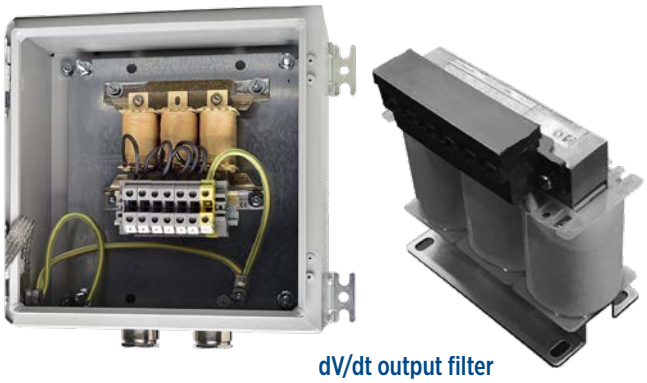
* Mountable filter (optional filter box available)

MODEL NO. DV/DT OUTPUT FILTER IP54

filter model no.	type	IP	$V_{NOMINAL}$ [V]	$I_{NOMINAL}$ [A]	fs [kHz]	Dimensions a x b x c [mm]	weight [kg]
*002352414	dV/dt	54	380 - 460	14	4	164 x 196 x 141	4.2
*002352432	dV/dt	54	380 - 460	32	4	164 x 196 x 141	5
*002352490	dV/dt	54	380 - 460	45	4	264 x 339 x 211	11.5
314005112	dV/dt	54	380 - 460	61	4	325 x 354 x 227	24
314005118	dV/dt	54	380 - 460	87	4	405 x 654 x 227	37
314005124	dV/dt	54	380 - 460	140	4	550 x 560 x 550	52
314005125	dV/dt	54	380 - 460	205	4	550 x 560 x 550	62
314005126	dV/dt	54	380 - 460	310	4	550 x 560 x 550	81

* Mountable filter (optional filter box available)

			IP23		IP54	
			Box Size		Box Size	
			1	2	1	2
filter type	[A]	part no.	002150FB0	002150FB1	002150FB2	002150FB3
dV/dt	14	002352414	✓	✓	✓	✓
	32	002352432	✓	✓	50% Amp. derating	✓
	90	002352490	x	✓	x	50% Amp. derating



dV/dt output filter

SINUS OUTPUT FILTER

MODEL NO. SINUS OUTPUT FILTER IP00

filter model no.	type	IP	$V_{NOMINAL}$ [V]	$I_{NOMINAL}$ [A]	fs [kHz]	Dimensions a x b x c [mm]	weight [kg]
002347013	Sinus	00	380 - 460	14	4	180 x 105 x 210	10
002347011	Sinus	00	380 - 460	32	4	240 x 115 x 280	17.5
002347012	Sinus	00	380 - 460	115	4	300 x 150 x 285	42
314005121	Sinus	00	380 - 460	140	4	360 x 311 x 413	87
314005122	Sinus	00	380 - 460	205	4	420 x 335 x 460	105
314005171	Sinus	00	380 - 460	261	4	420 x 335 x 460	125
314005123	Sinus	00	380 - 460	310	2.5	420 x 365 x 460	140
314005168	Sinus	00	380 - 460	460	2.5	480 x 460 x 523	190
314005169	Sinus	00	380 - 460	590	2.5	480 x 490 x 523	225

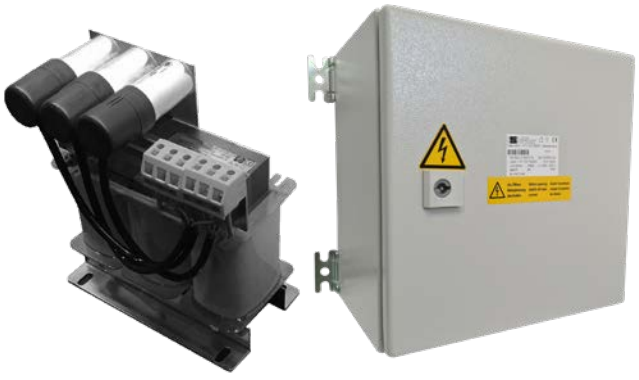
* Mountable filter (optional filter box available)

MODEL NO. SINUS OUTPUT FILTER IP54

filter model no.	type	IP	$V_{NOMINAL}$ [V]	$I_{NOMINAL}$ [A]	fs [kHz]	Dimensions a x b x c [mm]	weight [kg]
*002347013	Sinus	54	380 - 460	14	4	264 x 339 x 211	13.5
*002347011	Sinus	54	380 - 460	32	4	264 x 339 x 211	21
314005115	Sinus	54	380 - 460	38	4	770 x 610 x 620	76
314005139	Sinus	54	380 - 460	46	4	770 x 610 x 620	90
314005116	Sinus	54	380 - 460	72	4	770 x 610 x 620	112
314005127	Sinus	54	380 - 460	140	4	770 x 610 x 620	167
002347020	Sinus	54	380 - 460	180	4	800 x 600 x 400	166
314005128	Sinus	54	380 - 460	205	4	1150 x 920 x 890	303
314005170	Sinus	54	380 - 460	261	2.5	1150 x 920 x 890	434
314005129	Sinus	54	380 - 460	310	2.5	1150 x 920 x 890	429

* Mountable filter (optional filter box available)

			IP23		IP54	
			Box Size		Box Size	
			1	2	1	2
filter type	[A]	part no.	002150FB0	002150FB1	002150FB2	002150FB3
Sinus	14	002347013	x	✓	x	✓
	32	002347011	x	✓	x	✓
	-	-	-	-	-	-



Sinus output filter

OUTPUT FILTER ACCESSORIES

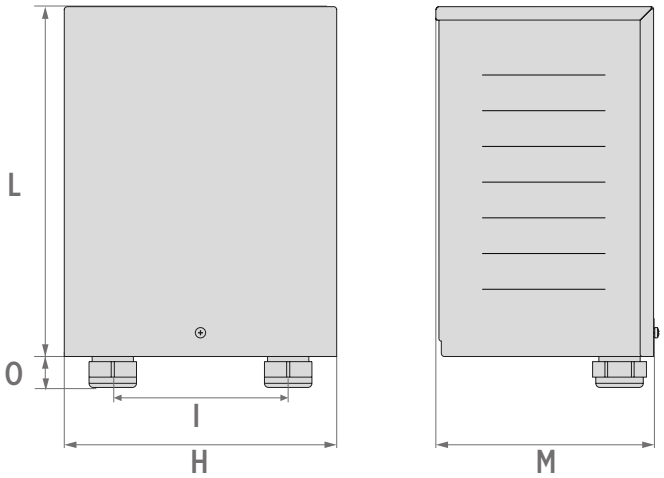
FILTER HOUSING

- Optional output filter boxes can be used in combination with dedicated output filter models to increase the IP enclosure rating and protect the output filter when installed outside of a control panel.
- Please refer to the below table to select the correct output filter box. Due to the thermal characteristics and heat dissipation of an output filter it is required to apply a 50% output filter current [A] derating when IP 54 rated filter boxes are used.
- Example: Installing the 32A dV/dt output filter model (002352432) in the IP54 rated filter box (box size 1) will limit the max. output filter current to 50% = 16A max. output filter current.

			IP23		IP54		
			Box Size		Box Size		
			1	2	1	2	
filter type	[A]	part no.	002150FB0	002150FB1	002150FB2	002150FB3	
dV/dt	14	002352414	✓	✓	✓	✓	
	32	002352432	✓	✓	50% Amp. derating	✓	
	90	002352490	x	✓	x	50% Amp. derating	
Sinus	14	002347013	x	✓	x	✓	
	32	002347011	x	✓	x	✓	
	-	-	-	-	-	-	

DIMENSIONS

Box Size	part no.	Dimensions [mm]				
		L	H	M	O	I
1	002150FB0	196	164	141	29	100
1	002150FB2	196	164	141	29	100
2	002150FB1	339	264	211	30	170
2	002150FB3	339	264	211	30	170



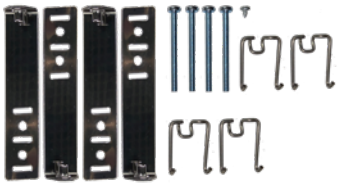
VARIABLE FREQUENCY DRIVE ACCESSORIES

PRESSURE TRANSDUCER

Transducer part no.	Type	Range	Signal [mA]	Material	
002851075	Pressure sensor without cable	0-10 Bar	4-20	A304	
002851080	Pressure sensor without cable	0-16 Bar	4-20	A304	
002851085	Pressure sensor without cable	0-25 Bar	4-20	A304	
002851076	Pressure sensor with 2m cable	0-6 Bar	4-20	A304	
002851081	Pressure sensor with 2m cable	0-10 Bar	4-20	A304	
002852211	Pressure sensor with 2m cable	0-16 Bar	4-20	A304	

MOTOR AND WALL MOUNTING KITS

DrivE-Tech

Type	Kit model no.	
Motor Mounting Kit for DrivE-Tech 2.015, 2.030, 4.022, 4.040 ■ Screws and connectors ■ Motor mounting frames	14211110	
Wall installation kit for 2.015, 2.030, 4.022, 4.040 ■ Fan with protective grid ■ Screws ■ Wall mounting plate	14211121	
Wall installation kit for DT 4.055 - 4.150 ■ Fan 2x ■ Screws ■ Wall mounting frames ■ cover plate	14211030	

DrivE-Tech COMPACT

Type	Kit model no.	
Wall installation kit for DT Compact 2.022 - 4.221 ■ Screws and connectors ■ Wall mounting plate	002150WK0	

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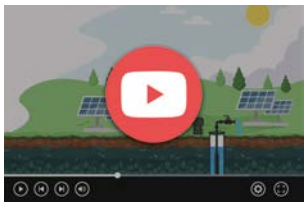
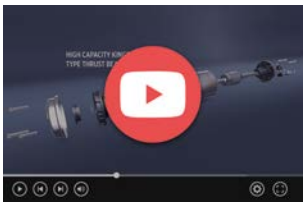


Explainer video
High Efficiency System

Energy savings with
High Efficiency System



4" High Efficiency System

X-Drive
Variable Frequency Converter

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Submersible motors
& Accessories

Download our Quick set-up guide from our website franklinwater.eu to perform the installation step by step via mobile App:

CATALOG REVISION CHANGES NOTICE

Rev. No.	Changes	Page
01	new design DrivE-Tech framesize 1	27, 30
	new HES overview tables	10, 13, 14, 17, 18, 21
	Solar versions added	10, 15, 20
	table Sinus output filter IP54 adjusted (filter model no. 002347020)	38
02	150 kW motor versions added	30, 31
	Dimensions and weights of the motors added	26, 28, 30, 32

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