



Franklin Electric

VARIABLE FREQUENCY DRIVES

DRIVES FOR THE USE WITH FRANKLIN ELECTRIC PUMPING SYSTEMS





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Franklin Electric reserves the right to amend specification without prior notice. For the most up-to-date product information, visit franklinwater.eu.

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 flexibility, 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

IP65/54 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

APPLICATIONS



VARIABLE FREQUENCY DRIVES

FEATURES & BENEFITS

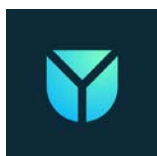
The Drive-Tech and Cerus X-Drive are variable frequency drives designed to control and protect three phase asynchronous and permanent magnet synchronous motors in residential, industrial, municipal, and agricultural applications. They are easy to integrate into existing infrastructure or to be used as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

CERUS® X-DRIVE

The Cerus X-Drive is a variable frequency drive that offers an extensive range of amperage and configuration options, making it versatile enough for nearly any constant or variable torque application. Industry standard application settings are pre-configured for submersible or centrifugal pumps, supply or exhaust fans, cooling towers, vacuum pumps, and constant torque and permanent magnet motors. In addition, many input/output and control options are available for application specific features, such as PID speed control, pressure control, temperature or level controls.

FEATURES & BENEFITS

CONFIGURATION

- Compatible with three-phase induction or permanent magnet motors
- Extensive selection of models available
- Easy setup with built-in application defaults
- Many programmable Input/Output terminal options
- Available in IP20 / 00 enclosure offerings

APPLICATION-SPECIFIC FEATURES

- Many pump specific features such as constant pressure, flow, level control
- Pump screen clean
- Broken pipe detection
- Dual demand controls
- Automated scheduling
- Multi-drive booster control

OPERATION

- Integrated HAND-OFF-AUTO switch functionality
- Integrated display with keypad control of all functions
- Real-time fault logging with date and time stamps

PROTECTION

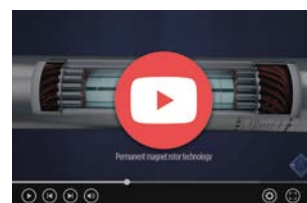
- PT100 motor temperature protection, Protection against short circuit, incorrect wiring, surges, underload, overload, drive overheat, undervoltage, overvoltage, phase loss, phase imbalance, output open phase, overpressure, sensor fault, etc.
- Pump dry run
- Locked rotor or pump
- The X-Drive allows your motor to gradually ramp up and down, saving equipment from sudden, harsh rushes of current that can shorten its lifespan.

COMMUNICATION

- RS-485 communication (Modbus, BACnet) for remote control or monitoring
- Bluetooth connectivity with Cerus X-Drive Mobile App
- Communications for multi-drive operations up to 8 VFDs
- One-to-One™ Remote control feature



One-to-One™
Remote control feature



permanent magnet technology

CERUS X-DRIVE

MODEL NO. CODES

1
3
 CXD - 032A - 4V - K
2
4

1. **Product family:**
Cerus X-Drive Series
2. **Output Amperage ratings:**
5 - 930 A
3. **Input voltage:***
2 V = 200/230 V
4 V = 460 V → 380-500 V
6 V = 575 V
4. K = drive incl. Bluetooth plug-in-card

*2 and 6 V models on request



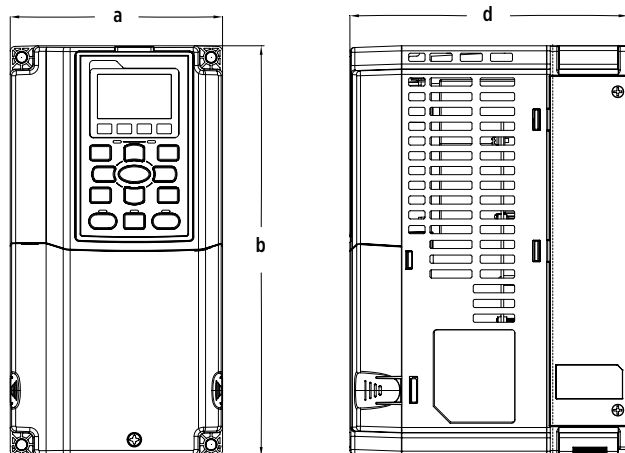
CERUS X-DRIVE

MODEL NUMBER CERUS X-DRIVE

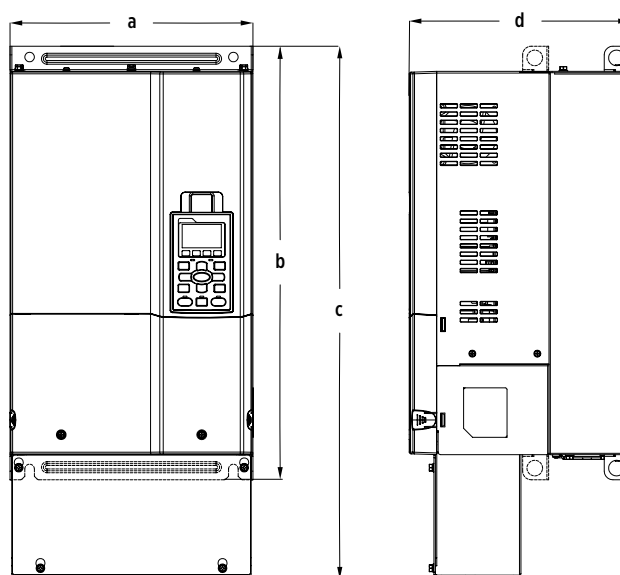
drive model no.	drive type	IP	V_{in} [V]	I_{out} [A]	dimensions				weight [kg]	Frame size
					a	b	c	d		
CXD-013A-4V-K	X-Drive 13A	IP	3x380-500	13	130	250		170	3	A
CXD-018A-4V-K	X-Drive 18A	20	3x380-500	18	130	250		170	3	A
CXD-024A-4V-K	X-Drive 24A	20	3x380-500	24	190	320		190	5.5	B
CXD-032A-4V-K	X-Drive 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)

OUTLINE DIMENSIONS



Cerus X-Drive
Frame A, Frame B, Frame C



Cerus X-Drive
Frame D, Frame DO, Frame E, Frame F, Frame G

CERUS® X-DRIVE SPECIFICATION

Mains Connection	Input voltage		3ph 380-460 V
	Input frequency		50-60 Hz
	Displacement power factor (cosphi)		> 0.98
Motor controls	Control methods		V/F and SVC (Sensorless Vector Control)
	Control type		PWM (Pulse Width Modulation)
	Frequency Setting Resolution		Digital Reference: 0.01 Hz (Below 100 Hz), 0.1 Hz (Over 100 Hz) Analog Reference: [Max. output frequency] x 0.03 / 60 Hz (±11 bit)
	Frequency Accuracy		Digital: 0.01 % of Max. Output Frequency, Analog: 0.1 % of Max. Output Frequency
	V/F Control Curve		12 preset V/F curves and four-point square curve
	Speed Control Ratio		1:12 (50 Hz - 60 Hz) at 60 Hz maximum frequency
	Maximum Output Frequency		380- 460VAC models: 599 Hz (90 kW and above: 400 Hz)
	Overload Capacity		Variable torque: 120% of VFD rated current for 1 minute during every 5 minutes of operation Constant torque: 150% of VFD rated current for 1 minute during every 5 minutes of operation and 160 % for 3 seconds during every 25 seconds of operation
Operation	Operation Method		Keypad / Terminals / RS-485 BACnet or Modbus Communication / Optional Modbus TCP/IP & Ethernet IP Communication
	Analog Input		Two analog inputs 0- 10 VDC/ 4- 20 mA and one AI 0-10 VDC. Digital: Keypad or Communication
	By Digital Inputs	Start Signal	Forward, Reverse and Jog (some features can start and stop VFD based on analog signal).
		Digital Input	8 programmable digital inputs can be set to any selection from long list of functions
		Multi-Step	Up to 17 speeds can be set including Jog by programmable digital inputs.
		Jog	Jog operation with adjustable Jog frequency
		Fault Reset	Resets VFD faults via keypad, digital input or communication. Some critical faults can only be reset by cycling the VFD power.
		Safety Inputs	SCM and STO terminals for safety circuit wiring
	Outputs	Three Multi-Function Relays	One relay with Form C: 250VAC 3A/30VDC, 3A (resistive) 1.2A (inductive) contact, Two relays with Form A: 250VAC 1.2A/30VDC 3A (resistive) 1.2A (inductive), Each relay can be programmed to any selection from the functions list.
		Two Analog Outputs	Selections: Output Frequency, Output Current, Output Voltage, Output kW, DC Link Voltage, AVI1, ACI, AVI2 AI signal level. Both outputs are 0-10VDC scalable from 10 to 200%.
	General Operation Functions		DC Braking, Frequency Limit, Jump Frequencies, 2nd ACC/DEC, Auto Restart, Auto-Tuning, PID w/sleep, Flying Start, Speed Search, DC Braking, Slip Compensation, Motor Pre-heat, Temperature Foldback, Damper Control, Fireman's Override, Shutdown, Power-on Delay, Run Delay, Minimum Run Timer, PM Motor and Auto-Tuning.
	Pump Operation Functions/Protections		Sleep Mode with Pressure Boost, Pipe Fill, PID, Overpressure, ULD (Underload), HLD (High Load), Broken Pipe, Backspin Timer, MMC, Lubrication, Screen Clean, No-Flow Protection, Pump Prime Time
Protection	VFD Fault Trips		Over Voltage, Low Voltage, Over Current, Overload, Short Circuit, Ground Fault, VFD Overheat, Input Phase Loss, Output Phase Open, CPU Communication Error, Signal Loss, Hardware Fault, etc.
	Motor temperature		3-wire PT100 motor temperature protection
	Motor Overload		Adjustable electronic motor overload protection.
	Overcurrent		380/400/440/460 VAC Variable Torque: At 200% of VFD rated current, 380/400/440/460 VAC Constant Torque: At 240% of VFD rated current, Current clamp: Variable Torque: 130- 135%, Constant Torque 170- 175% 575 VAC models: At 225% VFD rated current; Current clamp: Variable Torque: 128- 141%, Constant Torque: 170- 175%
	Overvoltage		380-460 VAC models: At 820VDC DC bus voltage
	VFD Overtemperature		Built-in IGBT and Capacitor Bank temperature sensors
	VFD Alarm		Stall Prevention at ACC and DEC, Overload, Thermal Sensor Fault, Capacitors High Temperature, Signal Loss, Overpressure, Underload, High Load, etc.
Keypad Display	Operation Information		Output Frequency, Output Current, Output Voltage, Frequency Reference, Operating Speed, DC Voltage, kWattmeter, Run-time, Last Trip Time, Pressure, etc.
	Fault history		Provides 6 fault records and logs 30 faults

CERUS® X-DRIVE SPECIFICATION

Environ- ment	Operating Temperature	IP21: 14°F - 104°F (-10°C - 40°C), IP00: 14°F - 122°F (-10°C - 50°C)
	Storage temperature	-13°F - 158°F (-25°C - 70°C)
	Ambient Humidity	up to 95 % RH. (non-condensing)
	Altitude	Normal up to 3300 ft (1000 m). At altitude up to 2,000 m, de-rate by 1% of rated current or lower 0.5 °C of temperature for every 10 m above 1000 m. Maximum altitude for corner grounded TN system is 2 000 m. For application over 2 000 m, please contact FELE for more details.
	Vibration and Impact	1 mm peak to peak value from 2 Hz to 13.2 Hz; 0.7G - 1.0G from 13.2 Hz to 55 Hz; 1.0G from 55 Hz to 512 Hz. Comply with IEC 60068-2-6 and IEC/EN60068-2-27.
	Environmental Conditions	Pollution degree 2. No corrosive gas, combustible gas, oil mist or dust, IEC60721-3-3/ IEC60364-1/ IEC60664-1
	Enclosure Ratings	IP20/00
Agency Approvals	UL	UL508C, UL/cUL
	CE Low Voltage	EN6100-5-1
	CE EMC	EN61800-3, EN61000-3-12, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-6-2, IEC61000-6-4
	Other	C-Tick, ROHS

DRIVE-TECH MINI

The DriveE-Tech MINI is an easy-to-use, versatile and highly featured variable frequency drive. It can be used in a wide range of pumping applications, from the residential household constant pressure control to light commercial multi-pump pressure boosting. Combined with specifically designed features, mobile app with remote control and a robust IP66, outdoor-rated, enclosure the Drive-Tech MINI improves, controls and protects surface or submersible pumping systems.

FEATURES & BENEFITS

CONFIGURATION

- Compatible with three-phase induction or permanent magnet motors
- Available in 1-230V IN / 3-230V OUT or 3-400V IN / 3-400V OUT
- Easy setup with multi level user access and presets
- Programmable Input/Output terminal options
- Outdoor rated IP66 enclosure for use in harsh environments
- Direct wall mount and surface pump mounting
- Low harmonic drive design to meet EN61000-3-12
- Integrated Input filter for use in first environment C1 EN61800-3

APPLICATION-SPECIFIC FEATURES

- Pump specific features, including: constant water pressure, flow, level control
- Multi pump operation controlling a second pump at constant speed
- Combo operation connecting up to 8 Drive-Tech MINI units
- Alternating pump mode
- Surface or submersible pump cascading
- Constant speed mode with 2 setpoints

OPERATION

- Integrated multi row OLED display showing alarms, pump speed, set point and more
- Fully controllable through Unyconnect mobile app
- Real-time fault logging with date and time stamps
- MPPT control for PV-panel powered solar pumping applications
- Multi power operation allows to use AC and DC supply voltage

PROTECTION

- Protection against short circuit, surges, underload, overload, drive overheat, undervoltage, overvoltage, phase loss, phase imbalance, overpressure, sensor fault, etc.
- Pump dry run
- Locked rotor or pump

COMMUNICATION

- RS-485 Communications (Modbus) multi pump operation, remote control and monitoring
- Bluetooth connectivity with Unyconnect mobile app
- Bridge mode using 2 smartphones and GSM/Wifi connection for permanent remote control
- Communications for multi-drive operations up to 8 VFDs



DRIVE-TECH MINI

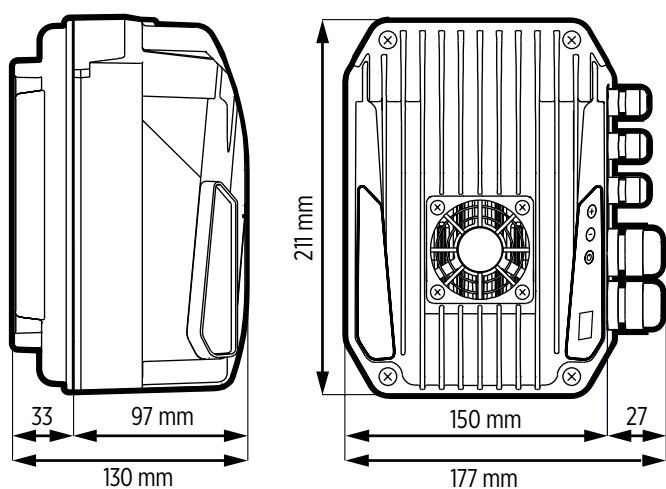
MODEL NUMBER DRIVE-TECH MINI

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

OUTLINE DIMENSIONS



DRIVE-TECH COMPACT

The DriveE-Tech COMPACT is designed and developed to maintain existing features of the Drive-Tech MINI while extending the operation range up to 22 kW. It is dedicated to improving submersible or surface pumping systems in many different applications like municipal water supply, irrigation, commercial pressure boosting, HVAC and many more. The combination of high feature set, an extended operation range and compact while robust enclosure design, makes it ideal for nearly any stand-alone decentralized pumping application.

FEATURES & BENEFITS

CONFIGURATION

- Compatible with three-phase induction or permanent magnet motors
- Available in 1-230V IN / 3-230V OUT or 3-400V IN / 3-400V OUT
- Optional integrated plug-in output filter card
- Low harmonic drive design to meet EN61000-3-12
- Integrated Input filter for use in first environment C1 EN61800-3
- Easy setup with multi level user access and presets
- Programmable Input/Output terminal options
- Outdoor rated IP66 enclosure for use in harsh environments
- Direct wall mount and surface pump mounting

APPLICATION-SPECIFIC FEATURES

- Pump specific features, including: constant water pressure, flow, level control
- Multi pump operation controlling a second pump at constant speed
- Alternating pump mode
- Surface or submersible pump cascading
- Constant speed mode with 2 setpoints

OPERATION

- Integrated multi row OLED display showing alarms, pump speed, set point and more
- Fully controllable through Unyconnect mobile app
- Real-time fault logging with date and time stamps
- MPPT control for PV-panel powered solar pumping applications
- Multi power operation allows to use AC and DC supply voltage

PROTECTION

- Protection against short circuit, surges, underload, overload, drive overheat, undervoltage, overvoltage, phase loss, phase imbalance, overpressure, sensor fault, etc.
- Pump dry run
- Locked rotor or pump
- PT100 motor temperature protection on request (running change available end of Q4/2023)

COMMUNICATION

- RS-485 Communications (Modbus) multi pump operation, remote control and monitoring
- Bluetooth connectivity with Unyconnect mobile app
- Bridge mode using 2 smartphones and GSM/Wifi connection for permanent remote control
- Communications for multi-drive operations up to 8 VFDs



DRIVE-TECH COMPACT

MODEL NUMBER DRIVE-TECH COMPACT

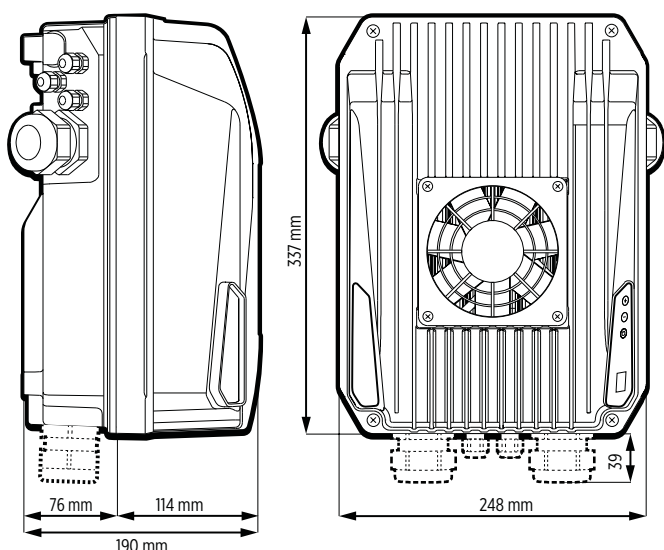
drive model no.	drive type	IP	V _{IN} [V]	I _{OUT} [A]	dimensions [mm]	weight [kg]
002152090	DT COMPACT 2.022 M/T	66	1x220-240	9.5	248 x 337 x 190	10
002152120	DT COMPACT 2.030 M/T	66	1x220-240	12.5	248 x 337 x 190	10
002152180	DT COMPACT 2.040 M/T	66	1x220-240	18.5	248 x 337 x 190	10
002150140	DT COMPACT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

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

drive model no.	drive type	IP	V _{IN} [V]	I _{OUT} [A]	dimensions [mm]	weight [kg]
002150142	DT COMPACT 4.055 T/T PT100	66	3x380-460	14	248 x 337 x 190	10
002150182	DT COMPACT 4.075 T/T PT100	66	3x380-460	18	248 x 337 x 190	10
002150252	DT COMPACT 4.110 T/T PT100	66	3x380-460	25	248 x 337 x 190	10
002150302	DT COMPACT 4.150 T/T PT100	66	3x380-460	30	248 x 337 x 190	10
002150382	DT COMPACT 4.185 T/T PT100	66	3x380-460	38	248 x 337 x 190	10
002150442	DT COMPACT 4.220 T/T PT100	66	3x380-460	44	248 x 337 x 190	10

* supports PT100 motor temperature protection

OUTLINE DIMENSIONS



DRIVE-TECH MINI / DRIVE-TECH COMPACT SPECIFICATION

Mains Connection	Input voltage		1ph 220-240 V; 3ph 380-460 V	
	Input frequency		50-60 Hz (+/- 2%)	
	Displacement power factor (cosphi) near unity		> 0.98	
Motor controls	Control methods		V/F and SVC (Sensorless Vector Control)	
	Control type		PWM (pulse width modulation)	
	Frequency Setting Resolution		Digital Reference: 0.01 Hz	
	Frequency Accuracy		Digital: 0.01 % of Max. Output Frequency	
	V/F Control Curve		Adjustable V/F curve	
	Maximum Output Frequency		1ph 220-240 V models: 300 Hz; 3ph 380- 460VAC models: 300 Hz	
	Overload Capacity		110% of VFD rated current for 1 minute during every 5 minutes of operation	
	Operation Method		Keypad / Terminals / RS-485 Modbus Communication / Bluetooth Mobile App control	
Protection	Analog Input		4 Analog Inputs (2x 0- 10VDC) (2x 4- 20mA)	
	By Digital Inputs	Start Signal	Forward, Reverse	
		Stop Signal	Motor ramp down	
		Digital Input	4 programmable digital inputs (Normally Open / Normally Closed), motor run, motor stop	
	Outputs	Fault Reset	Resets VFD faults via keypad, digital input or communication. Some critical faults can only be reset by cycling the VFD power.	
		2x Multi-Function Outputs	2 programmable digital outputs (NO, NC), motor run signal, alarm signal	
	RS 485 Serial Port		Output Frequency, Output Current, Output Voltage, Output kW, DC Link Voltage	
	General Operation Functions		Frequency Limit, Jump Frequencies, 2nd ACC/DEC, Auto Restart, Auto-Tuning, PID w/sleep, Temperature Foldback, Run Delay, Minimum Run Timer, PM Motor Control and Auto-Tuning	
	Pump Operation Functions/Protections		Sleep Mode, Pipe Fill, PID, Overpressure, Dry Run (Underload), HLD (High Load), Broken Pipe, No-Flow Protection	
	VFD Fault Trips		Over Voltage, Low Voltage, Over Current, Overload, Short Circuit, Ground Fault, VFD Overheat, Input Phase Loss, Signal Loss, Hardware Fault, etc.	
	Motor Overload		Adjustable electronic motor overload protection	
	Motor temperature		3-wire PT100 motor temperature protection (on request)	
	Overcurrent		220-240 VAC variable torque: at 110% of VFD rated current 380-460 VAC variable torque: at 110% of VFD rated current	
	Overvoltage		380-460 VAC models: at 820VDC DC bus voltage	
	Overtemperature		Built-in IGBT and capacitor bank temperature sensors	
	VFD Alarm		Stall Prevention at ACC and DEC, Overload, Thermal Sensor Fault, Capacitors High Temperature, Signal Loss, Overpressure, Underload, High Load, etc.	
Keypad Display	Operation Information		Output Frequency, Output Current, Output Voltage, Frequency Reference, Operating Speed, DC Voltage, kWattmeter, Run-time, Last Trip Time, Pressure, etc.	
	Fault		Provides 6 fault records and logs 30 faults	
Environment	Operating Temperature		-10 °C - 40 °C (14 °F - 104 °F)	
	Storage temperature		-10 °C - 60 °C (14 °F - 140 °F)	
	Ambient Humidity		up to 95 % RH. (non-condensing)	
	Altitude		Normal up to (1000 m), -1% derating every 100 m	
	Vibration and Impact		Complies with EN 60068-2-6:2008 and EN60068-2-27:2009 and EN60068-2-64:2008	
	Enclosure Ratings		IP66	
Max. Input efficiency (>=X%)	Drive model		Drive-Tech MINI	Drive-Tech COMPACT
	Input voltage	220-240 AC	95	95
		380-460 VAC	96	97
	CE Low Voltage		EN6100-5-1	
	CE EMC		EN61800-3, EN61000-3-12, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-6-2, IEC61000-6-4	
	Other		C-Tick, ROHS	

DRIVE-TECH

The DriveE-Tech series has been designed to optimize, control and protect your pumping system. It can be used with different pump types such as vertical multistage, centrifugal or submersible pumps, operating in many different applications up to 130 kW.

FEATURES & BENEFITS

CONFIGURATION

- Compatible with three-phase induction or permanent magnet motors
- Available in 1-230V IN / 3-230V OUT or 3-400V IN / 3-400V OUT
- Setup and parameter adjustments through multi row display and user interface
- Low harmonic drive design to meet EN61000-3-12
- Integrated Input filter for use in first environment C1 EN61800-3
- Easy setup with multi level user access and presets
- Programmable Input/Output terminal options
- Robust IP54/55/66 enclosure rating
- Direct wall mount and surface pump mounting

APPLICATION-SPECIFIC FEATURES

- Pump specific features including: constant water pressure, flow, level control
- Multi pump operation controlling a second pump at constant speed
- Combo operation connecting up to 8 Drive-Tech MINI units
- Alternating pump mode
- Surface or submersible pump cascading
- Constant speed mode with 2 setpoints

OPERATION

- Integrated multi row display allows to select and adjust individual parameter settings
- Fully controllable through Unyconnect mobile app
- Real-time fault logging with date and time stamps
- MPPT control for PV-panel powered solar pumping applications
- Multi power operation allows to use AC and DC supply voltage

PROTECTION

- Protection against short circuit, surges, underload, overload, drive overheat, undervoltage, overvoltage, phase loss, phase imbalance, overpressure, sensor fault, etc.
- Pump dry run
- Locked rotor or pump

COMMUNICATION

- RS-485 Communications (Modbus) multi pump operation, remote control and monitoring
- Bluetooth connectivity with Unyconnect mobile app
- Bridge mode using 2 smartphones and GSM/Wifi connection for permanent remote control
- Communications for multi-drive operations up to 8 VFDs

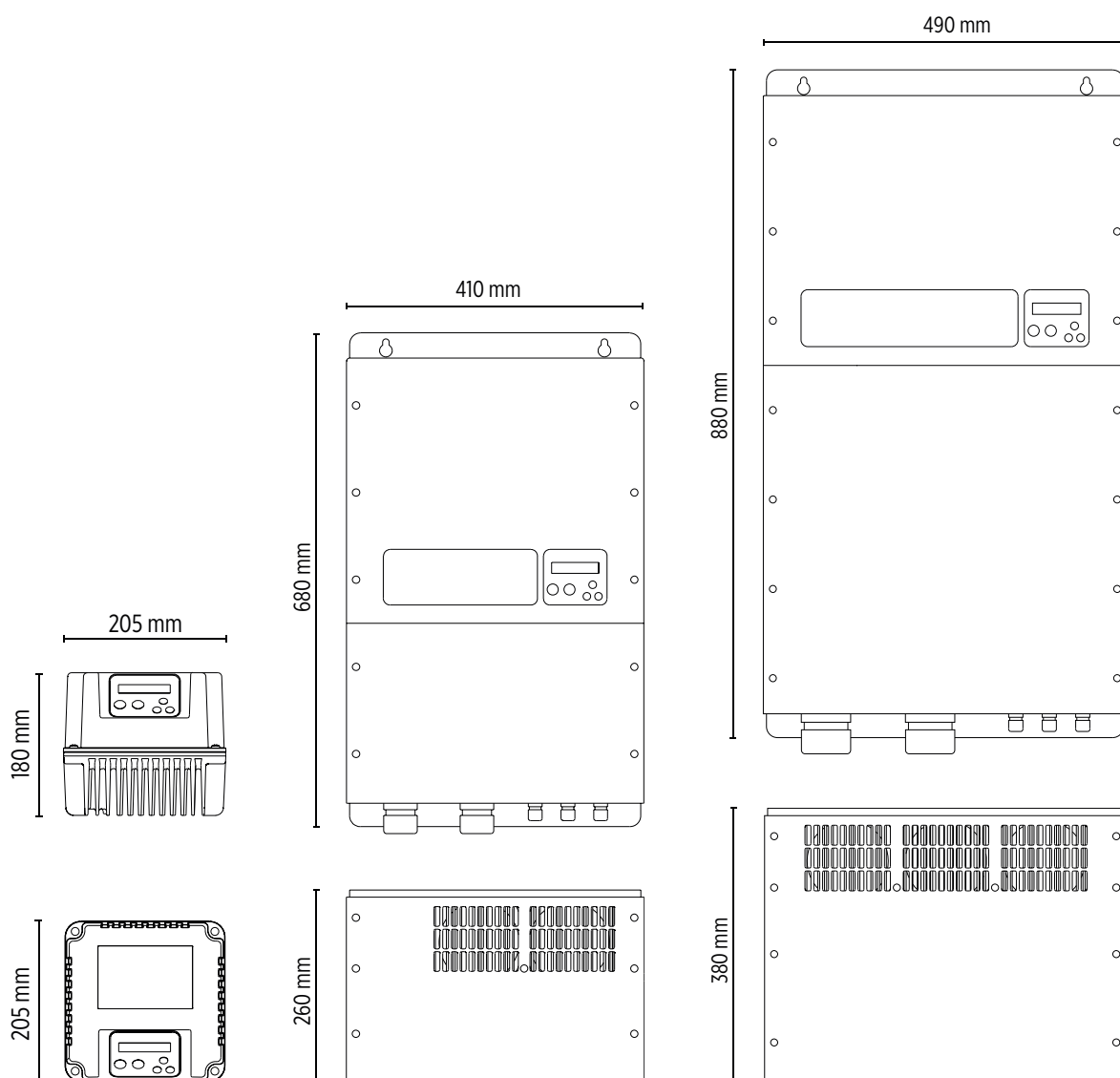


DRIVE-TECH

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

OUTLINE DIMENSIONS



DRIVE-TECH



Drive-Tech
Frame 1



Drive-Tech
Frame 3



Drive-Tech
Frame 4

DRIVE-TECH SPECIFICATION

Mains Connection	Input voltage		1ph 220-240 V; 3ph 380-460 V
	Input frequency		50-60 Hz (+/- 2%)
	Displacement power factor (cosphi) near unity		> 0.98
Motor controls	Control methods		V/F and SVC (Sensorless Vector Control)
	Control type		PWM (pulse width modulation)
	Frequency Setting Resolution		Digital Reference: 0.01 Hz
	Frequency Accuracy		Digital: 0.01 % of Max. Output Frequency
	V/F Control Curve		Adjustable V/F curve
	Maximum Output Frequency		1ph 220-240 V models: 300 Hz; 3ph 380- 460VAC models: 300 Hz
	Overload Capacity		110% of VFD rated current for 1 minute during every 5 minutes of operation
	Operation Method		Keypad / Terminals / RS-485 Modbus Communication / Bluetooth Mobile App control
Protection	Analog Input		4 Analog Inputs (2x 0- 10VDC) (2x 4- 20mA)
	By Digital Inputs	Start Signal	Forward, Reverse
		Stop Signal	Motor ramp down
		Digital Input	4 programmable digital inputs (Normally Open / Normally Closed), motor run, motor stop
		Fault Reset	Resets VFD faults via keypad, digital input or communication. Some critical faults can only be reset by cycling the VFD power.
		Safety Inputs	SCM and STO terminals for safety circuit wiring
	Outputs	2x Multi-Function Outputs	2 programmable digital outputs (NO, NC), motor run signal, alarm signal Status Relay (Motor running) / Alarm Relay (Fault)
		Digital Output	2x Digital Relay Output (NO, NC) D.O.L pump 1 / D.O.L pump 2
		RS 485 Serial Port	Output Frequency, Output Current, Output Voltage, Output kW, DC Link Voltage
	General Operation Functions		Frequency Limit, Jump Frequencies, 2nd ACC/DEC, Auto Restart, Auto-Tuning, PID w/sleep, Temperature Foldback, Run Delay, Minimum Run Timer, PM Motor Control and Auto-Tuning
	Pump Operation Functions/Protections		Sleep Mode, Pipe Fill, PID, Overpressure, Dry Run (Underload), HLD (High Load), Broken Pipe, No-Flow Protection
	VFD Fault Trips		Over Voltage, Low Voltage, Over Current, Overload, Short Circuit, Ground Fault, VFD Overheat, Input Phase Loss, Signal Loss, Hardware Fault, etc.
	Motor Overload		Adjustable electronic motor overload protection
	Overcurrent		220-240 VAC variable torque: at 110% of VFD rated current 380-460 VAC variable torque: at 110% of VFD rated current
	Overvoltage		380-460 VAC models: at 820VDC DC bus voltage
	Overtemperature		Built-in IGBT and capacitor bank temperature sensors
	Restart After IPF		Adjustable power loss duration up to 20 sec. Leakage current is greater than 50 % of rated current of the drive.
	VFD Alarm		Stall Prevention at ACC and DEC, Overload, Thermal Sensor Fault, Capacitors High Temperature, Signal Loss, Overpressure, Underload, High Load, etc.
Keypad Display	Operation Information		Output Frequency, Output Current, Output Voltage, Frequency Reference, Operating Speed, DC Voltage, kWattmeter, Run-time, Last Trip Time, Pressure, etc.
	Fault		Provides active fault/alarm
Environment	Operating Temperature		-10 °C - 40 °C (14 °F - 104 °F)
	Storage temperature		-10 °C - 60 °C (14 °F - 140 °F)
	Ambient Humidity		up to 95 % RH. (non-condensing)
	Altitude		Normal up to (1000 m), -1% derating every 100 m
	Vibration and Impact		Comply with EN 60068-2-6:2008, EN60068-2-27:2009 and EN60068-2-64:2008
	Enclosure Ratings		IP54, IP55, IP66
Input efficiency (>=X%)	Drive model		DriveE-Tech 2.015 - 2.030 / 4.185 - 4.1320
	Input voltage	220-240 AC	94
		380-460 VAC	97
	CE Low Voltage		EN6100-5-1
	CE EMC		EN61800-3, EN61000-3-12, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-6-2, IEC61000-6-4
	Other		C-Tick, ROHS

VARIABLE FREQUENCY SOLAR DRIVES

DRIVE-TECH SOLAR MP / DRIVE-TECH MINI SOLAR MP / DRIVE-TECH COMPACT SOLAR MP

Specific Drive-Tech, Drive-Tech MINI and Drive-Tech COMPACT variable frequency drives are available for use in solar powered water pumping applications. These drive models can be directly supplied by a VDC solar array without the need of additional equipment and offer the same features as AC grid supplied models. An advanced MPPT algorithm offers best performance during times with less sunlight available, increases water output and ensures a reliable and steady pump operation.



Drive-Tech MINI Solar MP
 IP66 wall mounted /
 Pump mounted solar
 drive

Drive-Tech COMPACT Solar MP
 IP66 wall mounted /
 Pump mounted solar
 drive

Drive-Tech Solar MP
 IP65/54 wall mounted
 / Pump mounted solar
 drive

PV Solar Supply [VDC]	AC Grid Supply [VAC]	Input f [Hz]	Max V _{OUT} [VAC]	DTm Solar MP	DTC Solar MP	DT Solar MP
90-400 (650)	1- 90-265	50/60	3x 250	0,55-2,2 kW	(2,2-4,0 kW)	-
320-850	3- 190-520	50/60	(3x250) 3x400	-	4,0-22 kW	(4,0) - 130 kW



VARIABLE FREQUENCY SOLAR DRIVES

DRIVE-TECH SOLAR MP / DRIVE-TECH MINI SOLAR MP / DRIVE-TECH COMPACT SOLAR MP

FEATURES & BENEFITS

CONFIGURATION

- Compatible with three-phase induction or permanent magnet motors
- Available in 1-230V IN / 3-230V OUT or 3-400V IN / 3-400V OUT
- Direct VDC supply from PV Solar array
- Optional integrated Plug-In output filter card for Drive-Tech COMPACT
- Low harmonic drive design to meet EN61000-3-12
- Integrated Input filter for use in first environment C1 EN61800-3
- Easy setup with multi level user access and presets
- Programmable Input/Output terminal options
- Outdoor rated IP66 enclosure for use in harsh environments
- Direct wall mount and surface pump mounting



Drive-Tech MINI Solar MP



Drive-Tech COMPACT Solar MP



Drive-Tech Solar MP

SPECIFIC DRIVE-TECH MINI SOLAR FEATURES

- Integrated VDC Voltage Boost reduces number of required solar panels significantly
- Integrated multi row OLED display showing alarms, pump speed, set point and more

SPECIFIC DRIVE-TECH COMPACT SOLAR FEATURES

- Optional available integrated Plug-In output filter card for extensive motor cable length
- Integrated multi row OLED display showing alarms, pump speed, set point and more

APPLICATION-SPECIFIC FEATURES

- Pump specific features including: constant water pressure, flow, level control
- Multi pump mode
- Alternating pumps
- Constant speed mode with 2 setpoints

OPERATION

- Integrated digital display and user interface with full control of drive settings
- Fully controllable through Unyconnect mobile app
- Real-time fault logging with date and time stamps
- MPPT control for PV-panel powered solar pumping applications
- Multi power operation allows to use AC and DC supply voltage

PROTECTION

- Protection against short circuit, surges, underload, overload, drive overheat, undervoltage, overvoltage, phase loss, phase imbalance, overpressure, sensor fault, etc.

COMMUNICATION

- RS-485 Communications (Modbus) multi pump operation, remote control and monitoring
- Bluetooth connectivity with Unyconnect mobile app
- Bridge mode using 2 smartphones and GSM/Wifi connection for permanent remote control
- Communications for multi-drive operations up to 8 VFDs

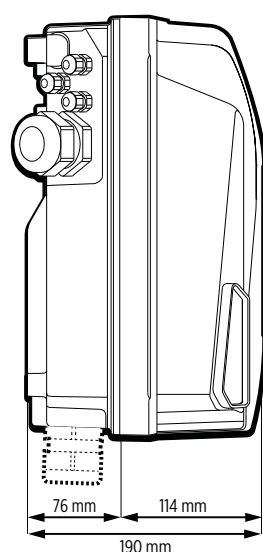
VARIABLE FREQUENCY SOLAR DRIVES

DRIVE-TECH SOLAR MP / DRIVE-TECH MINI SOLAR MP / DRIVE-TECH COMPACT SOLAR MP

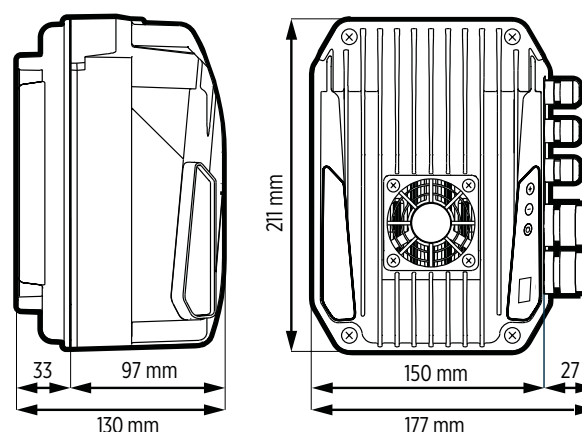
MODEL NUMBervARIABLE FREQUENCY SOLAR DRIVES

Drive PN	drive type	IP	VAC _{IN} [V]	Max VDC _{IN} [V]	I out [A]	dimensions [mm]	weight [kg]
314000165	DT MINI Solar 2.005 MP 3A	66	1x220-240	400	3		2.5
314000166	DT MINI Solar 2.011 MP 5A	66	1x220-240	400	5	150 x 211 x 130	2.5
314000167	DT MINI Solar 2.015 MP 7,5A	66	1x220-240	400	7.5	150 x 211 x 130	2.5
314000210	DT COMPACT Solar 2.022 MP 9,5A	66	1x220-240	650	9.5	248 x 337 x 190	10
314000211	DT COMPACT Solar 2.030 MP 12,5A	66	1x220-240	650	12.5	248 x 337 x 190	10
314000212	DT COMPACT Solar 2.040 MP 18,5A	66	1x220-240	650	18.5	248 x 337 x 190	10
002150141	DT COMPACT Solar 4.055 MP 14A	66	3x380-460	850	14	248 x 337 x 190	10
002150181	DT COMPACT Solar 4.075 MP 18A	66	3x380-460	850	18	248 x 337 x 190	10
002150251	DT COMPACT Solar 4.110 MP 25A	66	3x380-460	850	25	248 x 337 x 190	10
002150301	DT COMPACT Solar 4.150 MP 30A	66	3x380-460	850	30	248 x 337 x 190	10
002150381	DT COMPACT Solar 4.185 MP 38A	66	3x380-460	850	38	248 x 337 x 190	10
002150441	DT COMPACT Solar 4.220 MP 44A	66	3x380-460	850	44	248 x 337 x 190	10
314000161	DT Solar 3.030 MP 14A	66	3x380-460	850	14	260 x 260 x 180	9
002149A08	DT Solar 4.220 MP 48A	54	3x380-460	850	48	410 x 680 x 260	40
002149A09	DT Solar 4.300 MP 65A	54	3x380-460	850	65	410 x 680 x 260	40
002149A10	DT Solar 4.370 MP 75A	54	3x380-460	850	75	410 x 680 x 260	40
002149A11	DT Solar 4.450 MP 85A	54	3x380-460	850	85	410 x 680 x 260	40
002149A12	DT Solar 4.550 MP 118A	54	3x380-460	850	118	490 x 880 x 380	80
002149A13	DT Solar 4.750 MP 158A	54	3x380-460	850	158	490 x 880 x 380	80
002149A14	DT Solar 4.900 MP 185A	54	3x380-460	850	185	490 x 880 x 380	80
002149A15	DT Solar 4.1100 MP 215A	54	3x380-460	850	215	490 x 880 x 380	80
002149A16	DT Solar 4.1320 MP 268A	54	3x380-460	850	268	490 x 880 x 380	80

* Drive-Tech Solar 4.220 - 4.1320 on request (non-stock item)



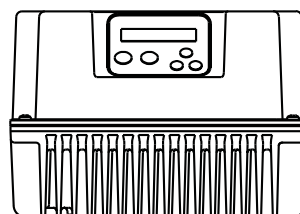
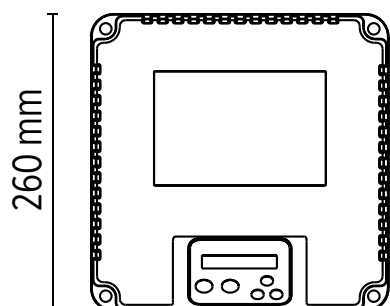
Drive-Tech COMPACT Solar MP



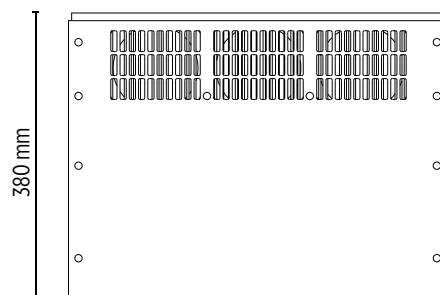
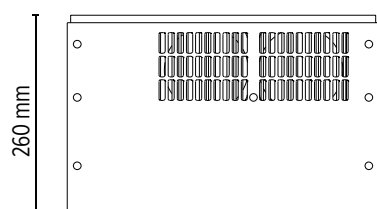
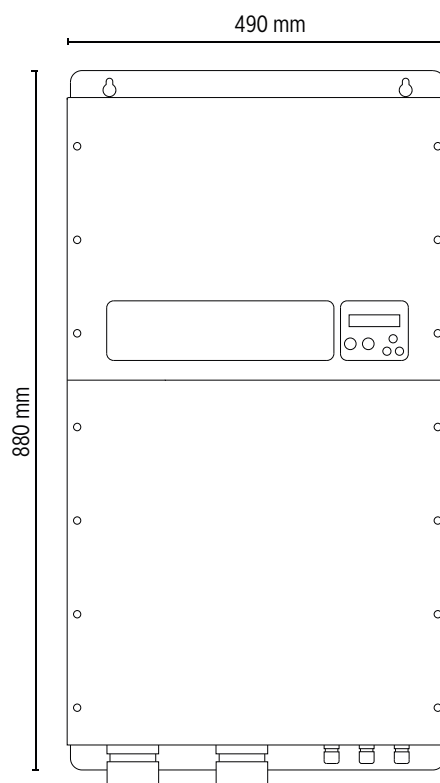
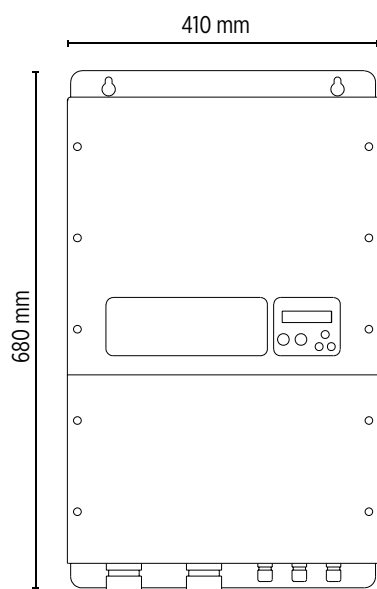
Drive-Tech MINI Solar MP

VARIABLE FREQUENCY SOLAR DRIVES

DRIVE-TECH SOLAR MP / DRIVE-TECH MINI SOLAR MP / DRIVE-TECH COMPACT SOLAR MP



Drive-Tech Solar MP



Drive-Tech

CERUS X-DRIVE PUMP CONTROL PANEL

3- Intelligent motor/pump control & protection

Designed for demanding applications in water supply, pressure boosting and irrigation, the X-Drive control panel delivers precise speed control, reliable protection and optimal performance for modern pumping applications.

All-in-one: Compact and reliable control panel with preconfigured CERUS X-Drive, ready for operation.

Flexible control: Integrated HAND-OFF-AUTO switch to easily select between manual and automatic pump control mode

Intuitive operation: Preinstalled user keypad with LCD display, Bluetooth connectivity and remote control via mobile app

Robust & durable: Robust IP54 rated control panel to be used in harsh environments

Easy installation: Reduced commissioning time due to preprogrammed CERUS X-Drive



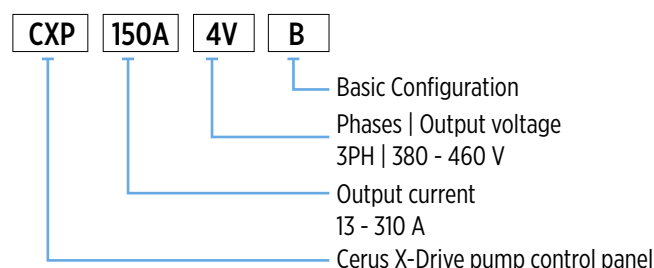
Specification

Pump & Motor Control Cerus X-Drive pump control panel	
Applications	Water supply, Irrigation, Dewatering, Pressure Control
power range	4 - 150 kW
Enclosure rating	IP54
Standard voltage	3-phase 380/400 V 50/60 Hz
Compatibility	3-phase synchronous and asynchronous motors
Input Voltage	380 (-15%) - 460 V (+10%)
Maximum ambient temperature	-25 °C - 40 °C
Ambient Humidity	20% - 90% RH, non-condensing
Automatic Motor tuning	Yes
Remote control	Bluetooth Connectivity FE Connect App
Application Settings	Selectable Application Presets
Dry Run Protection	Sensorless
User Keypad	Yes - Removable
User Mode	Manual and Automatic Mode
Analog Input	3 analog input (4 - 20 mA) / 0-10 V
No. of pumps	1
No. of level probes	up to 3
Dimensions	Frame size A (B C D E F)
Mounting	wall / floor mounting
Start-up procedure	Speed controlled ramp
Protective functions	sensorless dry-running detection blocked pump/shaft overload protection undervoltage protection surge protection water level phase loss / failure

Model no.

part no.	P [kW]*	V _{IN} [V]	NOMINAL [A]	Output Filter
CXP013A4VB	4-5,5	380-460	13	built-in
CXP018A4VB	7,5-9,3	380-460	18	built-in
CXP024A4VB	11	380-460	24	built-in
CXP032A4VB	15	380-460	32	built-in
CXP038A4VB	18,5	380-460	38	optional
CXP045A4VB	22	380-460	45	optional
CXP060A4VB	30	380-460	60	optional
CXP073A4VB	37	380-460	73	optional
CXP091A4VB	45	380-460	91	optional
CXP110A4VB	55	380-460	110	optional
CXP150A4VB	75-83	380-460	150	optional
CXP180A4VB	93-100	380-460	180	optional
CXP220A4VB	110	380-460	220	optional
CXP260A4VB	130	380-460	260	optional
CXP310A4VB	150	380-460	310	optional

Identification code



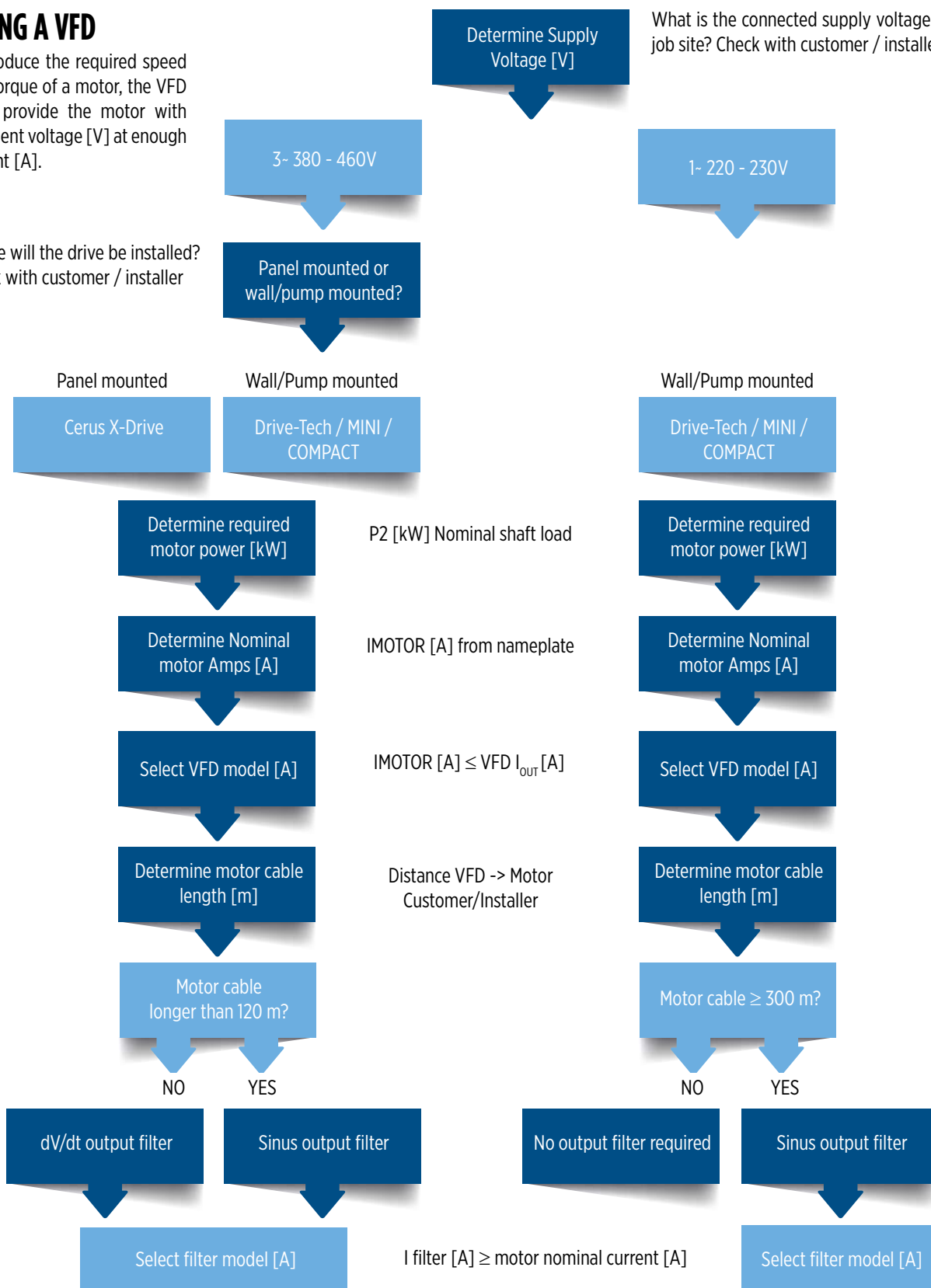
VARIABLE FREQUENCY DRIVE SELECTION GUIDE

To ensure best performance and a reliable pump operation the variable frequency drive must be correctly sized and selected. This selection guide will support you in selecting the right VFD for your pumping application.

SIZING A VFD

To produce the required speed and torque of a motor, the VFD must provide the motor with sufficient voltage [V] at enough current [A].

Where will the drive be installed?
Check with customer / installer



INPUT FILTER

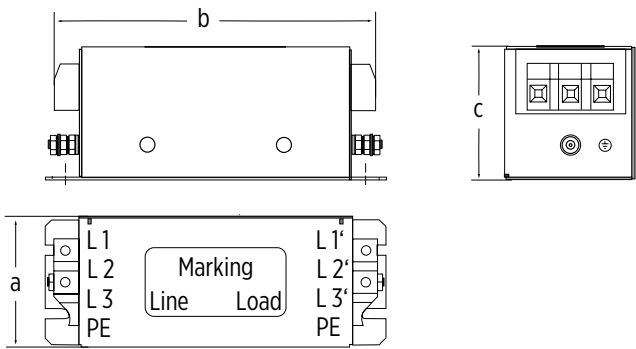
- A VFD input filter or EMI/EMC filter reduces the transfer of electromagnetic noise between the drive and mains power supply. Input filters can be used to improve electromagnetic compatibility in certain environments or if a higher level of filtering is desired.
- Required when using 3x400 V AC induction and permanent magnet motors with VFD

FEATURES & BENEFITS

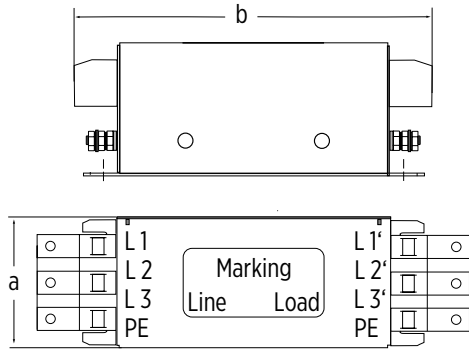
- The size of the input filter is selected according to the VFD nominal input current [A].
- For use with 3ph input VFD (e.g. 3x400V)
- Improves EMC and reduces emissions on mains supply.

filter model no.	Type	IP	V _{NOMINAL} [V]	I _{NOMINAL} [A]	dimensions [mm]	weight [kg]
On Request	EMI/EMC	20	380 - 520	20	58 x 150 x 58	1
On Request	EMI/EMC	20	380 - 520	50	85 x 217 x 80	1.5
On Request	EMI/EMC	20	380 - 520	80	95 x 256 x 90	2.5

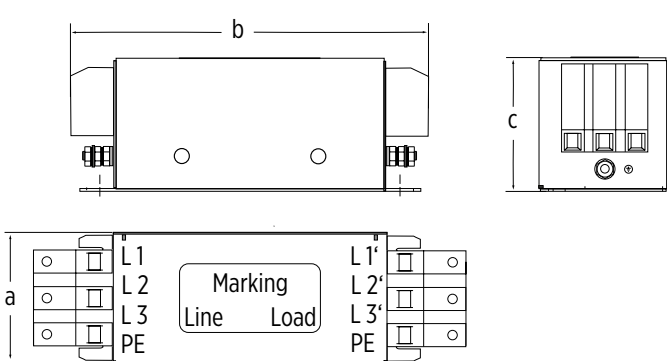
B84143A0010R106, B84143A0020R106 (10 A, 20 A)



B84143A0050R106, B84143A0065R106 (50 A, 65 A)



B84143A0080R106 (80 A)

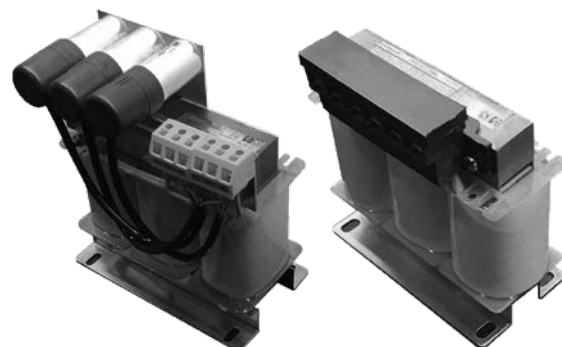


input filter REV/00-08-2023



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 tapering 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]	Mounting	weight [kg]
*002352414	dV/dt	00	380 - 460	14	4	120 x 67 x 115	wall / floor	2.7
*002352432	dV/dt	00	380 - 460	32	4	140 x 75 x 150	wall / floor	3.5
*002352490	dV/dt	00	380 - 460	90	4	180 x 120 x 200	wall / floor	8
314005301	dV/dt	00	380 - 460	38	2-6	155 x 80 x 165	wall / floor	3.5
314005302	dV/dt	00	380 - 460	105	2-6	230 x 145 x 210	wall / floor	11.5
314005303	dV/dt	00	380 - 460	140	2-6	230 x 145 x 210	wall / floor	12
314005304	dV/dt	00	380 - 460	150	2-6	230 x 145 x 210	wall / floor	12
314005305	dV/dt	00	380 - 460	205	2-6	230 x 155 x 210	wall / floor	13
308005306	dV/dt	00	380 - 460	310	2-6	265 x 200 x 235	wall / floor	28
314005307	dV/dt	00	380 - 460	460	2-6	300 x 200 x 280	wall / floor	30
314005308	dV/dt	00	380 - 460	590	2-6	300 x 240 x 285	floor	40

* 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]	Mounting	weight [kg]
*002352414	dV/dt	54	380 - 460	14	4	164 x 196 x 141	wall	4.2
*002352432	dV/dt	54	380 - 460	32	4	164 x 196 x 141	wall	5
*002352490	dV/dt	54	380 - 460	45	4	264 x 339 x 211	wall	11.5
314005309	dV/dt	54	380 - 460	62	2-6	400 x 250 x 500	wall	18
314005310	dV/dt	54	380 - 460	88	2-6	400 x 250 x 500	wall	21
314005311	dV/dt	54	380 - 460	140	2-6	400 x 250 x 500	wall	25
314005312	dV/dt	54	380 - 460	205	2-6	400 x 500 x 250	wall	29
314005313	dV/dt	54	380 - 460	310	2-6	500 x 500 x 250	floor	40

* Mountable filter (optional filter box available)

FILTER BOX

			IP23		IP54		
			Box Size		Box Size		
			1	2	1	2	3
filter type	[A]	part no.	002150FB0	002150FB1	002150FB2	002150FB3	002150FB4
dV/dt	14	002352414	✓	✓	✓	✓	✓
	32	002352432	✓	✓	50% derating	✓	✓
	90	002352490	x	✓	x	50% derating	✓

PLUG-IN OUTPUT FILTER CARD

drive type	Kit PN
Drive-Tech COMPACT DTC plug-In dV/dt filter card 32A DTC 4.055 - 4.150	002150FC0



DV/DT OUTPUT FILTER

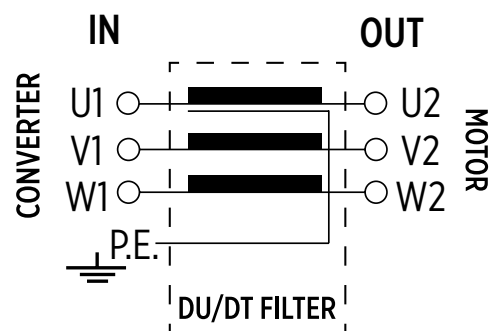
PICTURES AND OUTLINES



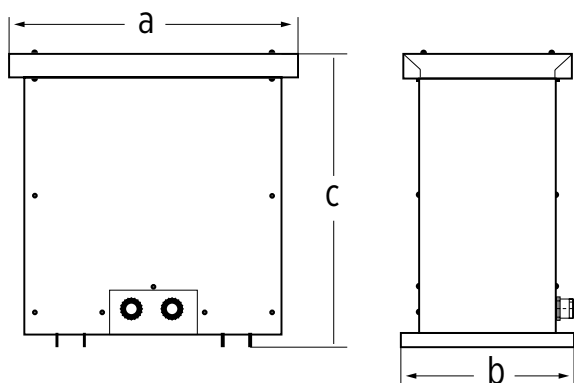
dV/dt output filter



filter connection plan

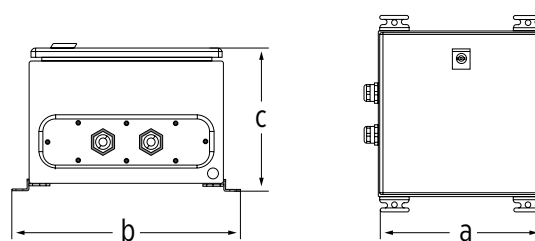


IP54 filter outlines floor mount



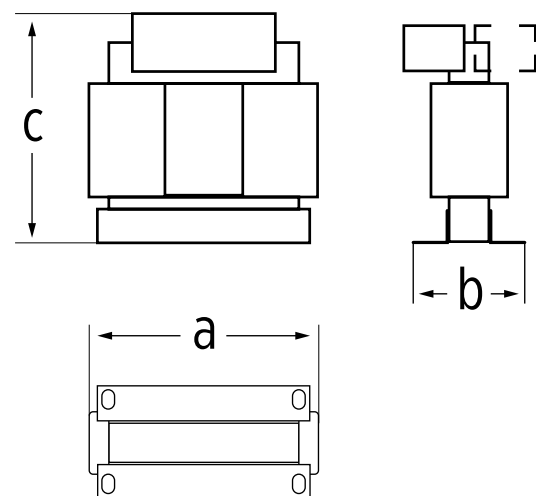
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IP54 filter outlines wall mount



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IP00 dV/dt filter outlines



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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]	Mounting	weight [kg]
*002347013	Sinus	00	380 - 460	14	4	180 x 105 x 210	wall / floor	10
*002347011	Sinus	00	380 - 460	32	4	240 x 115 x 280	wall / floor	17.5
*002347012	Sinus	00	380 - 460	115	4	300 x 150 x 285	floor	42
314005325	Sinus	00	380 - 460	38	≥4	240 x 200 x 270	wall / floor	17
314005326	Sinus	00	380 - 460	105	≥4	360 x 280 x 320	floor	43
314005327	Sinus	00	380 - 460	140	≥4	360 x 280 x 320	floor	55
314005328	Sinus	00	380 - 460	205	≥4	420 x 330 x 380	floor	85
314005329	Sinus	00	380 - 460	261	≥4	420 x 380 x 380	floor	120
314005330	Sinus	00	380 - 460	310	≥4	480 x 500 x 430	floor	120
314005331	Sinus	00	380 - 460	460	≥4	480 x 550 x 430	floor	175
314005332	Sinus	00	380 - 460	590	≥4	480 x 600 x 560	floor	235

* 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]	Mounting	weight [kg]
*002347013	Sinus	54	380 - 460	14	4	264 x 339 x 211	wall	13.5
*002347011	Sinus	54	380 - 460	32	4	264 x 339 x 211	wall	21
314005333	Sinus	54	380 - 460	38	≥4	400 x 250 x 500	floor	30
314005334	Sinus	54	380 - 460	105	≥4	600 x 350 x 750	floor	78
314005335	Sinus	54	380 - 460	140	≥4	600 x 350 x 760	floor	85
314005336	Sinus	54	380 - 460	205	≥4	855 x 630 x 670	floor	130
314005337	Sinus	54	380 - 460	261	≥4	1050 x 760 x 750	floor	180
314005338	Sinus	54	380 - 460	310	≥4	1050 x 760 x 750	floor	180

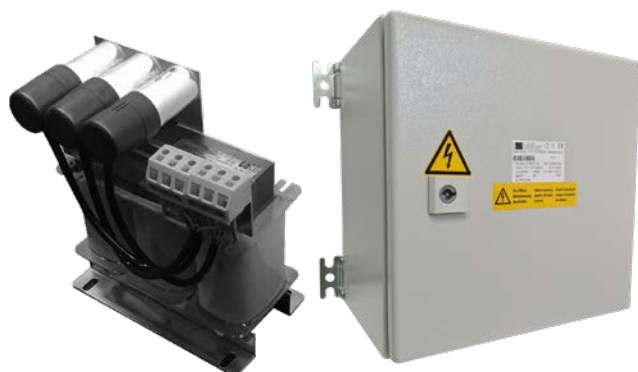
* Mountable filter (optional filter box available)

FILTER BOX

			IP23		IP54		
			Box Size		Box Size		
			1	2	1	2	3
filter type	[A]	part no.	002150FB0	002150FB1	002150FB2	002150FB3	002150FB4
Sinus	14	002347013	x	✓	x	✓	✓
	32	002347011	x	✓	x	✓	✓
	115	002347012	x	x	x	x	✓

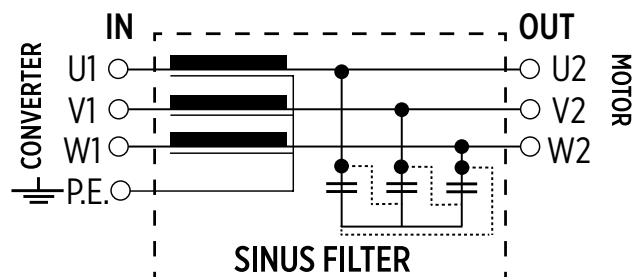
SINUS OUTPUT FILTER

PICTURES AND OUTLINES

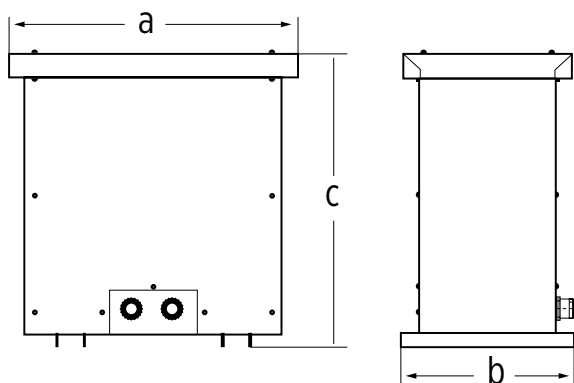


Sinus output filter

filter connection plan

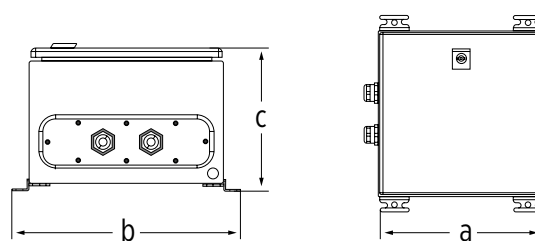


IP54 filter outlines wall mount



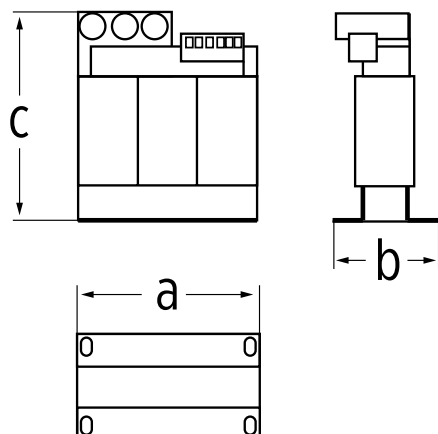
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IP54 filter outlines wall mount



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IP00 Sinus filter outlines



OUTPUT FILTER ACCESSORIES

FILTER HOUSING

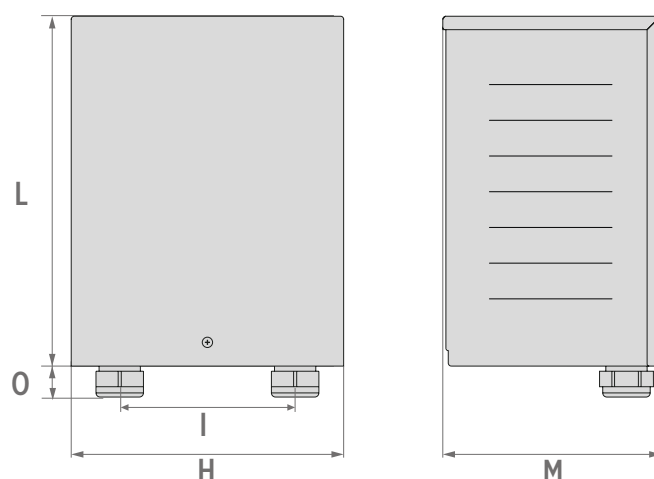
- Optional output filter boxes can be used in combination with dedicated output filter models to increase the IP enclosure rating and protect the output filter when installed outside of a control panel.
- Please refer to the below table to select the correct output filter box. Due to the thermal characteristics 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.



filter type	[A]	part no.	IP23		IP54		
			Box Size		Box Size		
			1	2	1	2	3
			002150FB0	002150FB1	002150FB2	002150FB3	002150FB4
dV/dt	14	002352414	✓	✓	✓	✓	✓
	32	002352432	✓	✓	50% derating	✓	✓
	90	002352490	x	✓	x	50% derating	✓
Sinus	14	002347013	x	✓	x	✓	✓
	32	002347011	x	✓	x	✓	✓
	115	002347012	x	x	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
3	002150FB4	800	600	400		



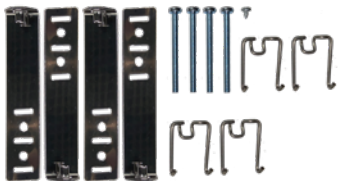
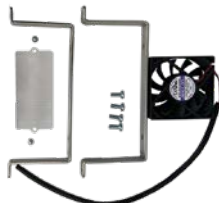
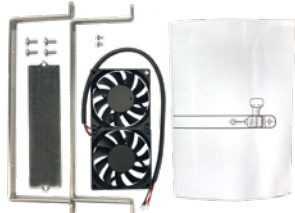
VARIABLE FREQUENCY DRIVE ACCESSORIES

PRESSURE TRANSDUCER

Transducer part no.	Type	Range	Signal [mA]	Material	
002851075	Pressure sensor without cable	0-10 Bar	4-20	304SS	
002851080	Pressure sensor without cable	0-16 Bar	4-20	304SS	
002851085	Pressure sensor without cable	0-25 Bar	4-20	304SS	
002852211	Pressure sensor with 2m shielded cable	0-16 Bar	4-20	304SS	
002851088	Pressure sensor with 2m shielded cable	0-16 Bar	4-20	316SS	

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	

VARIABLE FREQUENCY DRIVE ACCESSORIES

PLUG-IN OUTPUT FILTER CARD

Drive-Tech COMPACT

Kit part no.	Type	
002150FC0	DTC plug-In dV/dt filter card 32A DTC 4.055 - 4.150	

QUICK SETUP ACCESSORY KIT

Drive-Tech MINI

part no.	Type	
002150AP0	Wall mounting plate 1.50 m SCHUKO supply cable FASTON cable connectors	

DRIVE-TECH ACCESSORIES

Drive-Tech

part no.	Type	
308216110	KIT IOT WIFI DRIVE-TECH - Remote control / monitoring via WIFI 32 GB SD storage card - High-performance antenna	
308206110	KIT IOT GSM DRIVE-TECH - Remote control / monitoring vis GSM 32 GB SD storage card - High-performance antenna - SIM card <u>not</u> included	

X-DRIVE ACCESSORIES

Cerus X-Drive

part no.	Type	
10000004840	Bluetooth communications card for X-Drive	
CXD-KPD	X-Drive replacement keypad	
CMC-EIP01 CMC-EIP02	Modbus TCP / Ethernet Card	
MKC-KPPK	X-Drive control panel door mounting kit	

BROCHURES / CATALOGS



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



Download our comparison sheets from our website franklinwater.eu



Technical Bulletin FE CONNECT One-to-One™



FE CONNECT One-to-One™

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GL Boosting systems



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EVR Vertical multistage pumps



EH Horizontal Multistage pumps



EM Vertical Multistage pumps

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One-to-One™
Remote control feature



permanent magnet technology



FE CONNECT



Boosting systems



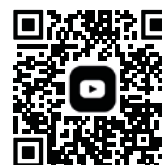
Tutorial Drive-Tech COMPACT dV/dt
plug-in card mounting



X-Drive
Variable Frequency Converter



Cerus X-Drive features



CATALOG REVISION CHANGE NOTICE

Rev. No.	Changes	Page
01	XDrive K version (drive incl. Bluetooth plug-in-card) added, XDrive accessories added	7, 8, 32
02	mounting options added	26, 28
	table data (I Nominal) of dV/dt filter adjusted	14
03	new picture DrivE-Tech framesize 1	4, 16, 18
	model no., enclosure rating and dimensions of DrivE-Tech framesize 1 adjusted	17, 19
	model no., current, dimensions and weight of output filters adjusted	26, 28
	motor and wall mounting kits adjusted	31
	Bluetooth communication card for X-Drive added	32
04	Accessories added	32 - 34
	Drive-Tech Solar models added	22
	Output filter boxes added	27, 29, 31
	update picture wall mounting kit 14211110	32
05	model no. DrivE-Tech accessories adjusted	33
	update picture of wall installation kit for 14211121	32
06	One-to-One™ Remote control feature added	6
	Pressure transducer adjusted	32
07	output filters and output filter boxes adjusted	27, 29, 31
08	CERUS X-Drive pump control panel added	24

NOTES

This image shows a full page of blank graph paper. The grid consists of small, uniform squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.



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