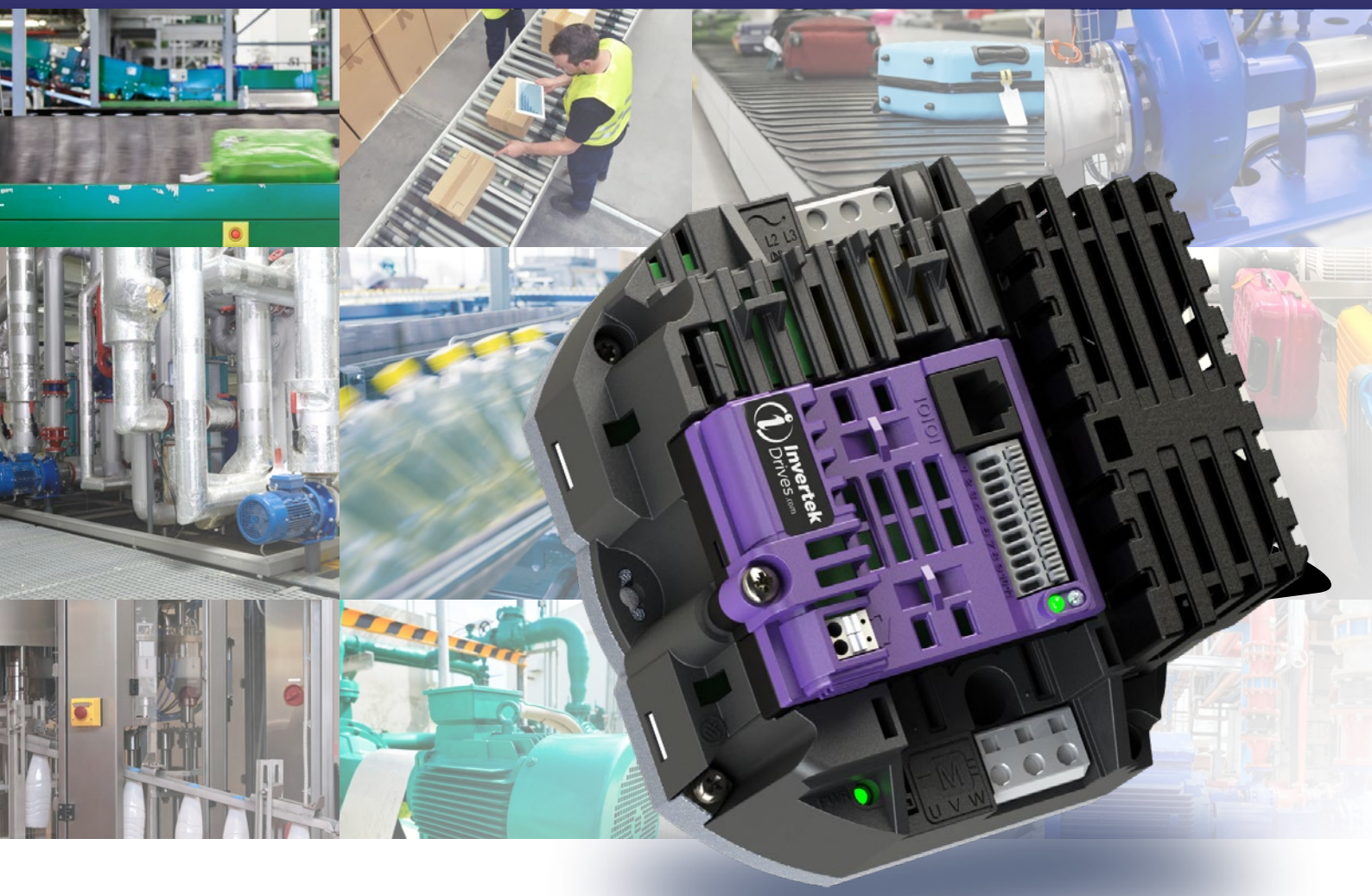
Invertek Drives.com

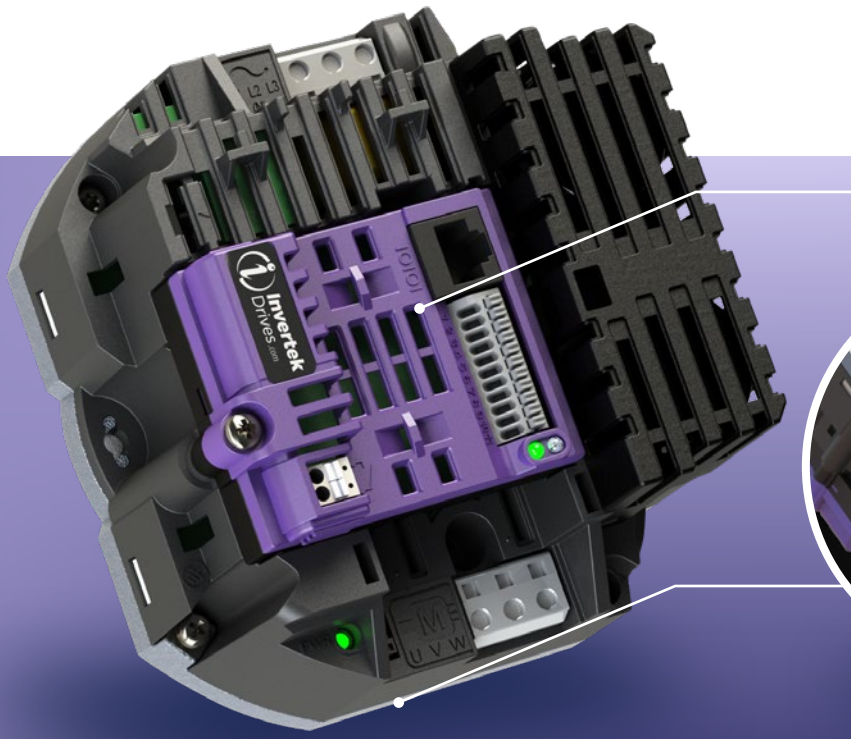
OPTIDRIVE™ COMPACT 2

High Performance Drive
specifically designed for OEM's



0.37kW – 4kW / 0.5HP – 5HP
110–480V Single & 3 Phase Input

OPTIDRIVE™ COMPACT 2



High Performance Drive

Invertek's high-performance OPTIDRIVE™ Compact 2; designed specifically for OEM machine builders. Exceptional control of all motor types; IM, PM, BLDC, SynRM and LSPM

EASY TO USE

Key Product Features

Open Connectivity & Easy Commissioning

- Seamless connectivity with any application controller
- Built in RS485 Modbus RTU
- Bluetooth connectivity available via Optistick Smart
- External TFT keypad available
- Drive status LEDs
- Communications options; Ethernet & Modbus TCP size 2 only

Environmental

- Wide operating temperature: –10°C to 50°C
- IP20 rated front enclosure
- Cold plate mounting for inclusion into OEM machnines
- Coated PCBs meet class 3C2 in accordance with EN60713-303
- Built-in EMC filter class C2 in accordance with EN61800-3-2004
- Low harmonic design compliant with; EN61000-3-2, (1 phase 200-230V input), and EN61000-3-12, (3 phase 380-480V input). Model dependent.

Selectable motor types

- AC Induction (IM)
- AC Permanent Magnet (PM)
- Brushless DC (BLDC),
- Synchronous Reluctance (SynRM)
- Line Start Permanent Magnet (LSPM)

Control Terminals

- Pluggable communication terminals
- Fixed spring loaded input terminal for easy installation.
- STO SIL3 Safe Torque Off for system protection
- Programmable, predefined input and output functions:
  - Start / Stop (Enable / Disable)
  - PTC motor thermal protection (0-10V, 4-20mA)
  - Relay (drive healthy / trip)

Supply voltages & output current

- 1 x 110 -115 +/-10% 230 V output 2.3A & 3.2A
- 1 x 200 -240V +/- 10% 230 V output 2.3A, 4.3A & 7A
- 3 x 200 -240V +/- 10% 230 V output 2.3A, 4.3A & 7A
- 3 x 380 - 480V +/- 10% 480 V output 2.2A, 4.1A, 5.8A & 9.5A

Active PFC Units

- 1 x 110 -230V +-10% 230V output 4.3A
- 1 x 200 -230V +/- 10% 230 V output 7A

Designed for incorporation into OEM machines. Using the machine as the drive heat-sink, using the machine to disparate the heat, maximising available machine space.

Sensorless Vector Control for all Motor Types

IM IE2 & IE3 Induction Motors

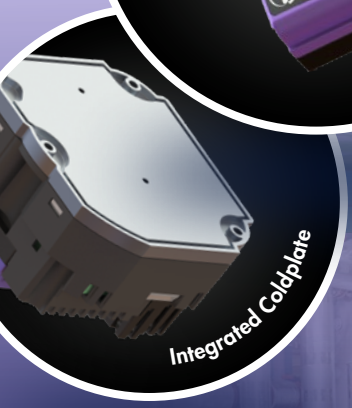
PM AC Permanent Magnet Motors

BLDC Brushless DC Motors

SynRM Synchronous Reluctance Motors

LSPM Line Start PM Motors

Precise and reliable control for **IE2, IE3, IE4 & IE5 motors**



When space is of a premium then the Invertek Compact 2 is the solution.

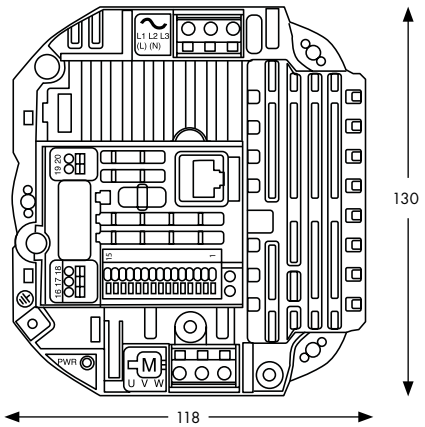
The OPTIDRIVE Compact 2 is offered in both Basic and Advanced variants.

The main differences between the models is I/O including STO and the parameter set. Both models can be tailored to OEM requirements dependent on the application and the quantities of drive required for the project.

The parameters used in the Basic version are suitable for simple applications such as fans, pumps and conveyors.

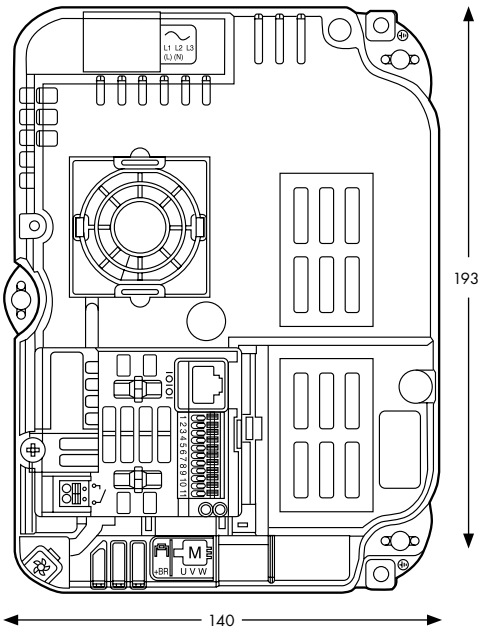
The parameters used in the Advanced version are more suitable for advanced machine control applications.

Size 1 drive



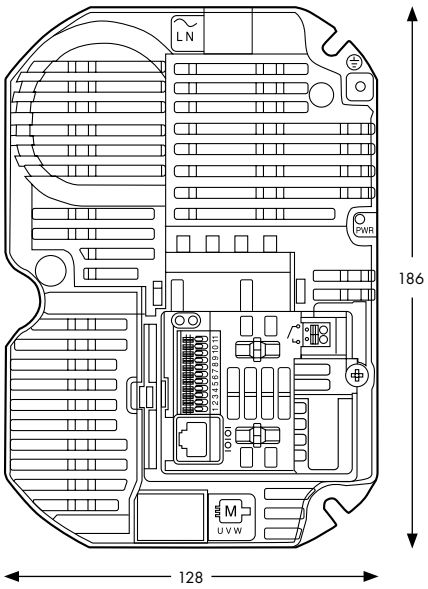
	Size	1A	1B
mm	Height	118	118
mm	Width	130	130
mm	Depth	74	85

Size 2 drive



	Size	2
mm	Height	140
mm	Width	193
mm	Depth	89

PFC drive



	Size	PFC
mm	Height	128
mm	Width	186
mm	Depth	81

	kW	HP	Amps	Size	Model Code
110–115V ± 10% 1 Phase Input	0.37	0.5	2.3	1A	OPC - 2 - 1 1 0023 - 1 E 1 G 0 0 3 K
	0.55	0.75	3.2	1B	OPC - 2 - 1 1 0032 - 1 E 1 2 0 0 3 K
200 – 240 ± 10% 1 Phase Input	0.37	0.5	2.3	1A	OPC - 2 - 1 2 0023 - 1 E 1 G 0 0 3 K
	0.75	1	4.3	1B	OPC - 2 - 1 2 0043 - 1 E 1 2 0 0 3 K
	1.5	2	7	1B	OPC - 2 - 1 2 0070 - 1 E 1 2 0 0 3 K
200 – 240 ± 10% 3 Phase Input	0.37	0.5	2.3	1A	OPC - 2 - 1 2 0023 - 3 E 1 G H 0 3 K
	0.75	1	4.3	1B	OPC - 2 - 1 2 0043 - 3 E 1 G H 0 3 K
	1.5	2	7	1B	OPC - 2 - 1 2 0070 - 3 E 1 2 H 0 3 K
380 – 480 ± 10% 3 Phase Input	0.75	1	2.2	1A	OPC - 2 - 1 4 0022 - 3 E 1 G H 0 3 K
	1.5	2	4.1	1B	OPC - 2 - 1 4 0041 - 3 E 1 2 H 0 3 K
	2.2	3	5.8	2	OPC - 2 - 2 4 0058 - 3 E 4 G H S 3 K
	4	5	9.5	2	OPC - 2 - 2 4 0095 - 3 E 4 G H S 3 K
PFC 110-230V +/-10% Single Phase Input	0.75	1	4.3	1C	OPC - 2 - 1 1 0043 - 1 F 1 G P 0 3 K
PFC 200-240V +/-10% Single Phase Input	1.5	2	7.0	1C	OPC - 2 - 1 2 0070 - 1 F 1 G P 0 3 K

Model Code: Product Family | Second Generation | Frame Size | Supply Voltage | Output Current | Input Supply Phases | EMC Filter | Brake Transistor | Enclosure Type | Harmonic Reduction | STO | Output Phases | Drive Type

Model Code Guide

OPC-2-11CCCC-DEFGHIJK

- Compact Optidrive Family
- 2nd Generation
- Frame Size
- 110-230V = 1, 200-240V = 2, 380-480V = 4 | Supply Voltage
- Output Current (1 Decimal Place)
- Single Phase Input = 1, 3 Phase Input = 3 | Input Supply Phases
- Without EMC Filter = O, With EMC Filter = F | EMC Filter
- Without Brake Transistor = 1, With Brake Transistor = 4 | Brake Transistor
- With Base Plate = 1, With Base Plate 7 Fan = 2 | Enclosure Type
- Electrolytic Caps. No PFC = 0, With PFC = P, Eco Film Caps = E | Harmonic Reduction
- Without STO = 0, With STO = S | STO
- 3 Phase Output = 3 | Output Phases
- Basic Control Pod = E, Advanced Control Pod = P, Eco Advanced Control Pod = V | Drive Type

See model code guide opposite

Input Ratings	Supply Voltage	110 -115V +/-10% 110-230V +10% -20% 200 -240V +/-10% 380 - 480V +/- 10%
	Supply Frequency	48 – 62Hz
	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour evenly spaced
Output Ratings	Output Power	110 -115V 0.37-0.75kW 110-230V 0.75kW 200 -240V 0.37-2.2kW 380 - 480V 0.75-5.5kW
	Overload Capacity	150% for 60 Sec *200 V 3 & single phase input 7 A units 110% overload.
	Output Frequency	0 – 500Hz
	Acceleration Time	0.01 – 600 seconds
	Deceleration Time	0.01 – 600 seconds
	Typical Efficiency	> 98%
Ambient Conditions	Temperature	Storage: –40 to 60°C Operating: –10 to 50°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL)
	Humidity	95% Max, non condensing
	Vibration	Conforms to EN61800-5-1
Enclosure	Ingress Protection (IP)	IP20
	Coated PCBs	Designed for operation in 3S2/3C2 environments according to IEC 60721-3-3
Programming	Modbus RTU (RS485)	Modbus RTU / CAN through terminals and RJ45 port.
	PC Tools	PC Tools software for Diagnostics and parameter configuration (RJ45 port only). Function block programming via downloadable software (Advanced Version)
	Keypad	Optional Remote Keypad with TFT display for diagnostic and programming
	Smartphone app	Optitools Mobile

Control Specification	Control Method	Terminal Comms Terminal / Comms
	PWM Frequency	4–32kHz
	Stopping Mode	Ramp to stop, Coast to stop
	Skip frequency	2 skip frequencies, user adjustable
	Control Modes	Modbus RTU (RS485) Terminal Control Digital / Analogue Terminal Control PI mode Master / Slave Mode

Safe Torque Off (STO)	STO is only available on size 2 with Advanced pod	
	IEC 61800-5-2:2016	SIL 3
	EN ISO 13849-1:2015	PL "e"
	EN 61508 (Part 1 to 7): 2010	SIL 3
	EN 60204-1: 2006 & A1: 2009	Cat 0
	EN 62061: 2005 & A2: 2015	SIL CL 3
	Independent Approval	TUV Rheinland

Application Features	PI Control	Internal PI Controller
	Intelligent Drive Thermal Management	Reduced-load operation of the system can be configured under high drive temperatures to prevent nuisance tripping
	Intelligent Motor Thermal Management	Reduced-load operation of the system can be configured under continued motor overload to prevent nuisance tripping
	Serial Communications-Loss Fall-Back Speed	The ability to configure the drive to run at a 'safe' speed in the even of a loss of serial communication. Can prevent total loss of operation whilst maintaining minimum process demands.
	Master Follower Configuration	The ability to run a cascade of machines with one Master regulating the operating point in PI Control

Conformance	The Compact 2 product range conforms to the relevant safety provisions of the following council directives: 2014/30/EU (EMC), 2014/35/EU (LVD), 2006/42/EC (Machinery Directive), 2011/65/EU (RoHS 2) and 2009/125/EC (Eco-design)	
	Design and manufacture is in accordance with the following harmonised European standards:	
	BSEN 61800-5-1: 2007 & A1: 2017	Adjustable speed electrical power drive systems. Safety requirements. Electrical, thermal and energy.
	BSEN 61800-3:2018	Adjustable speed electrical power drive systems. Part 3: EMC requirements and specific test methods (IEC 61800-3:2017).
	BSEN 61800-9-2:2017	Adjustable speed electrical power drive systems. Part 9:2: Ecodesign for power drive systems, motor starters, power electronics and their driven applications – Energy efficiency indicators for power drive systems and motor starters (IEC 61800-9-2:2017).
	BSEN 60529: 1992 & A2: 2013	Specifications for degrees of protection provided by enclosures
	BSEN 61800-5-2:2017	Adjustable speed electrical power drive systems.[as relevant] Part 5-2: Safety requirements – Functional (IEC 61800-5-2:2016).
	UL 61800-5-1	cUL Listed cUR Recognised for the coldplate variants
	BSEN 61000-3-12: 2011	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low voltage systems with input current >16 A and ≤ 75 A per phase
	BSEN 61000-3-2:2019 (single phase input variants only)	Electromagnetic compatibility (EMC). Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase)

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