



## HIGH PERFORMANCE AC DRIVE

### TECHNICAL DESCRIPTION

#### UNIQUENESS AND TECHNOLOGICAL EXCELLENCE

The **OPDEplus series** distinguishes itself in the market through the uniqueness and technological innovation of its solutions.

- Ensures **optimal performance and simplicity of use**
- Complies with internationally recognized standards such as: **CE** (Europe), **UL** (USA/Canada).
- **Easy installation and commissioning**
- Ideal for **three-phase asynchronous motors (IM)**, **Permanent Magnet Synchronous Motors (PMSM)** and **Synchronous Reluctance Motors (SynRM)**
- **Microprocessor architecture on unified software** with an integrated **IEC 61131-3 programmable PLC**
- All OPDEplus series drives can be programmed from a PC using the **"OPDEplorer"** configuration tool



#### Available Size

#### Heavy overload:

200% x 3 sec. + 155% x 30 sec.

**Light overload:** 120% x 30 sec.

**Standard overload:** 150% x 30 sec.

**Strong overload:** 200% x 30 sec.

#### Dimensions:

OPDEplus BF3							
310 A		370 A		460 A		510 A	
Pn [kW]*	In [A]#	Pn [kW]*	In [A]#	Pn [kW]*	In [A]#	Pn [kW]*	In [A]#
160	294,1	200	350	250	441,2	315	481,4
180	348,2	224	414,4	284	522,4	354	570
160	310	200	368,9	250	465	315	507,4
130	251,2	162	298,9	205	376,8	255	411,1
H= 978 x L = 484 x P/D = 315 mm; Kg = 85							

#### DIMENSIONS

H - mm 978

L - mm 484

P / D - mm 315

Kg 85

\* Nominal power Pn @ 400Vac

# Nominal Current In

### TECHNICAL DATA SHEET | OPDEplus BF3

<b>Supply voltage</b>	<ul style="list-style-type: none"> <li>• AC input : 3 x (200V-10% ÷ 480 V + 10%)</li> <li>• DC input : Vdc (280V-10% ÷ 680 V + 10%)</li> <li>• +24Vdc auxiliary supply voltage</li> </ul>
<b>PC programming and device interfacing</b>	Modbus RTU RS485, Modbus TCP/IP
<b>Fieldbuses</b>	CANbus, PROFINET/EtherCAT, Profibus
<b>Digital/analog I/O</b>	<ul style="list-style-type: none"> <li>• n° 4 configurable opto-isolated digital outputs (n° 2 with relay contact , max = 1A e n° 2 opto-isolated, max 60 mA)</li> <li>• n° 8 configurable opto-isolated digital inputs</li> <li>• S.T.O. function SIL3/PLE</li> <li>• n° 3 configurable analog inputs ± 10V o 4 ÷ 20 mA</li> <li>• n° 2 configurable analog outputs ± 10V</li> <li>• n° 1 frequency input (4 channels or frequency and direction)</li> </ul>
<b>Feedback supported</b>	Resolver, Hiperface (ST/MT), Hiperface DSL (HDSL), SinCos Incremental, SinCos Absolute, EnDat 01/02/21/22 (linear & rotary ST/MT), Biss B/C (linear & rotary ST/MT), Tamagawa (ST/MT), TTL/HTL & TTL+Hall (single ended e diff. mode)

<b>Permanent Magnet Synchronous motors (PMSM)</b>	Closed-loop control using one of the two possible feedbacks managed by the OPDEplus	<b>Synchronous Reluctance Motors (Synk &amp; AsynRM)</b>	Closed-loop control using one of the two possible feedbacks managed by the OPDEplus
	Integrated control for anisotropic motors (PMSM-IPM such as MTPA and d-axis phasing@standstill		Optimized, sensorless closed-loop control with flow curves
	Sensorless (wide range) optimized for low speeds and high torques, and high-speed spindles		Motor control over a wide flux weakening range
		<b>PWM</b>	~ Max 18 [KHz]*
<b>Asynchronous motors (IM)</b>	FOC with feedback (vector with feedback)	<b>Control loop bandwidth</b>	Current loop: 1400~2000 [Hz] Max
	Scalar V/F control, V/F control (FOC), and Optimized V/F control with torque compensation		Speed loop: Max 200 [Hz]
	Sensorless (wide range) optimized for low speeds and high torques, and high-speed spindles		
		* For switching frequencies above 18 kHz, please contact the technical office of BDF Digital Spa	

## MAIN CONTROL FEATURES

- Advanced PLC in standard IEC 61131-3 programming environment with a speed equal to the PWM period of the drive
- Integrated "standstill" auto-calibration (AT) for the identification of parameters of the equivalent mathematical model of each electric machine
- Two available memory banks
- On-the-fly recovery for IM/PMSM/SynRM
- Tropicalized electronic boards
- Extended life cycle capacitors
- Removable cooling fans with activation/deactivation control
- DC bus sharing
- Integrated dynamic braking module and external resistor
- Book format that saves space inside control panels

