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VFNC3 ULTRA-COMPACT TYPE

- Single-phase 200-240VAC supply
- Three-phase motor power, 0.2 to 2.2kW / 0.25 to 3HP ratings at 230VAC
- Compliant with IEC/EN 61800-3 standards, first environment cat. C1, without external suppressors
- Optional three-phase motor inductances.



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VFS11 TYPE

- Three-phase 380-500VAC supply
- Three-phase motor power, 0.4 to 15kW / 0.54 to 20HP ratings at 400VAC
 Compliant with standards IEC/EN 61800-3,
- Compliant with standards IEC/EN 61800-3, first environment cat C2 or second environment cat. C3, without external suppressors
- · Integrated dynamic tracking circuit
- Optional three-phase motor inductances
- Optional braking resistors.



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VFPS1 TYPE

- Three-phase 380-480VAC supply
- Three-phase 300-400VAC supply
 Three-phase motor power 18.5 to 630kW / 25 to 1000HP ratings at 400VAC
 Compliant with standards IEC/EN 61800-3,
- Compliant with standards IEC/EN 61800-3, first environment cat. C2 or second environment cat. C3, without external suppressors
- Integrated dynamic braking circuit up to 220kW
- Optional three-phase motor inductances
- · Optional braking resistors.

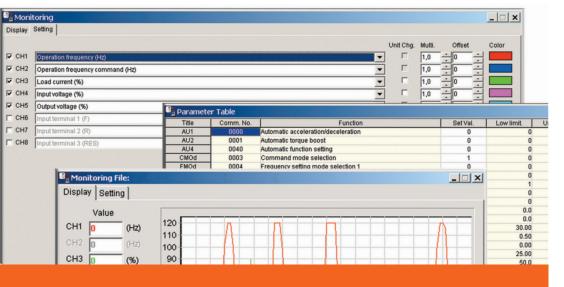
Description		VFNC3	VFS11	VFPS1
		1-phase	3-phase	3-phase
Method of control				
	Constant torque V/f	•	•	•
	Sensorless vector	•	•	•
	Automatic torque boost	•	•	•
	Variable torque (for pump and fan)	•	•	•
	Energy saving	•	•	•
	Vector with encoder feedback			•
Maximum output frequency				
	400Hz	•	•	
	500Hz			•
Overload				
	150% for 60s	•	•	
	120% for 60s (up to 90kW); 110% for 60s (over 90kW)			•
Serial communications				
	TTL/RS232		•	
	n° 1 RS485	•		
	n° 2 RS485			•
Protocols				
	Toshiba, Modbus®	•		
	Toshiba, Modbus [®] , PROFIBUS		•	•
Digital inputs		•	•	•
Digital outputs		•	•	•
Analog inputs		•	•	•
Analog outputs		•	•	•
Onboard potentiometer		•	•	
Auto-tuning		•	•	•
SLEEP function		•	•	•
FIRE function				•
Frequency potentiometer		•	•	•
3-wire motor running		•	•	•
PID adjustment		•	•	•
DC braking		•	•	•
Built-in braking circuit			•	•
Preset speed frequency (n°15)		•	•	•
Pump and fan functions		•	•	•
Auto-speed adjustment		•	•	•
Motor PTC thermistor input			•	•
Safety stop per EN ISO 13849-1 o	cat. 3			•

AC MOTOR DRIVES



- Versions for single-phase up to 2.2kW / 3HP and three-phase up to 630kW / 1000HP
- Special function for pump and fan control using PID algorithm
- Active earth leakage protection
- EMC suppressor built in all versions
- Selectable motor control mode: V/f, vector, energy saving
- Selectable digital and analog input and output functions
- IEC IP55 version available on request
- HVAC version, compliant with IEC/EN 61000-3-12 standards, available on request.

Motor drives	SEC.	-	PAGE
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MOTOR CONTROL AND PROTECTION

VFNC3 single-phase ultra-compact type



Order code 3-phase Weight le Qty motor power at 230V 0 per pkg [HP] [A] [kW] n° [kg]

Single-phase supply 200-240VAC 50/60Hz. EMC suppressor built in.

VFNC3S 2002PL W	1.4	0.2	0.25	1	0.900
VFNC3S 2004PL W	2.4	0.4	0.54	1	1.000
VFNC3S 2007PL W	4.2	0.75	1	1	1.300
VFNC3S 2015PL W	7.5	1.5	2	1	2.000
VFNC3S 2022PL W	10	2.2	3	1	2.000

Operation up to 50°C without derating.





Side-by-Side installation

Multiple units installed without side clearance for space saving

General characteristics

machine tools, car washes, fitness equipment, but also in applications of intermediate complexity, such as pumps, waterworks. The vector control and the possibility to enabble the motor auto-tuning warrants efficiency and high torques even with very low operating frequencies.

remote control (supervision and communication protocols). VFNC3 can be used in simple applications such as extractor fans, ventilators, conveyor belts,

VFNC3 is an ultra-compact motor drive with high performance and extremely reliable (printed circuit surface protection per IEC/EN 60721-3-3).

Easily installed, VFNC3 is equipped with a front display and innovative jog dial control, which simplifies the programming and control pocesses of the drive and motor. The on-board RS485 interface permits and overall remote control (supervision and communication)

SPEED REFERENCE SIGNALS

Reference signals for speed adjustment are obtained by:

- Front jog dial control (potentiometer)
- External potentiometer: $1-10k\Omega$
- Voltage signal: 0-10V
- Current signal: 4-20mA
- Remote keypad option
- 15 preset speeds via digital inputs
- RS485 serial signals.

PROGRAMMABLE INPUTS

- Selectable PNP or NPN I/O logic
- 4 digital multifunction inputs
- 1 digital configurable as analog input.

PROGRAMMABLE OUTPUTS

- 1 relay with changeover contact
- 1 static configurable as analog 0-10V/4-20mA.

PROTECTIONS

Traditional

model

- Overcurrent and overvoltage
- Input phase loss
- Output phase loss
- Motor drive overload
- Motor overload
- Output short circuit
- Motor stall.

SPECIAL FUNCTIONS

- PID function for pump and fan application
- Dual set of independent parameters and ramps for two different motor controls
- Automatic restarting and instantaneous speed tuning
- 15 viewable frequency values
- Start-up DC injection
- DC injection braking
- Motor control: constant torque V/f, sensorless vector, variabile torque.

Operational characteristics

- Input voltage: 200-240VAC single-phase
- Output voltage: ≤ input voltage
- Rated operational current: 1.4-10A
- Mains voltage: 50/60Hz
- Output frequency: 0.1-400Hz Frequency modulation: 2-16kHz
- Current overload: 150% for 60s
- IEC degree of protection: IP20 Ambient conditions
 - Operating temperature: -10...+60°C

 - Maximum altitude: 3000m (with derating)
 Relative humidity: 5-95% (with no condensing).

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada
(File E204788) as Power Conversion Equipment;
CSA certified for Canada (File 231252) as Motor Controllers - Miscellaneous. Compliant with standards: IEC/EN 61800-5-1, IEC/EN 61800-3 - first environment cat. C1 IEC/EN 60721-3-3, UL508, CSA C22.2 n° 14.



VFS11 type three-phase



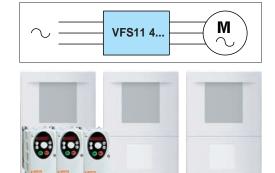
VFS11...

Order code	le •	3-phase motor power at 400V	Qty per pkg	Weight
	[A]	[kW] [HP]	n°	[kg]

Three-phase supply 380-500VAC 50/60Hz. EMC suppressor built in.

1.5	0.4	0.54	1	2.100
2.3	0.75	1	1	2.100
4.1	1.5	2	1	2.200
5.5	2.2	3	1	3.100
9.5	4.0	5	1	3.200
14.3	5.5	7.5	1	5.900
17	7.5	10	1	6.700
27.7	11	15	1	11.000
33	15	20	1	11.500
	2.3 4.1 5.5 9.5 14.3 17 27.7	2.3 0.75 4.1 1.5 5.5 2.2 9.5 4.0 14.3 5.5 17 7.5 27.7 11	2.3 0.75 1 4.1 1.5 2 5.5 2.2 3 9.5 4.0 5 14.3 5.5 7.5 17 7.5 10 27.7 11 15	2.3 0.75 1 1 4.1 1.5 2 1 5.5 2.2 3 1 9.5 4.0 5 1 14.3 5.5 7.5 1 17 7.5 10 1 27.7 11 15 1

- Operation up to 50°C without derating.
 200-240VAC three-phase version available on request; consult Customer Service for information; see contact details on inside front cover.



Traditional

model

"Side by Side" installation

Multiple units installed without side clearance for space saving

General characteristics

The innumerous functions available together with the constructive features consent the new VFS11 speed control to be used in a host of industrial and civil sectors, such as: waterworks and methane piping ducts, cement, paper, chemical and petrochemical industries.

The precise design of the front panel board and the configuration menus warrant easy and user-friendly commissioning of the motor drive.

SPEED REFERENCE SIGNALS

Reference signals for speed adjustment are obtained by:

- Front potentiometer
- External potentiometer: $1-10k\Omega$
- Voltage signal: 0-10V
- Current signal: 4-20mA
- Keypad on front
- Remote keypad option
- 15 preset speeds via digital inputs
- TTL serial signal (TOSHIBA-Modbus®-RTU)

PROGRAMMABLE INPUTS

- Selectable PNP or NPN I/O logic
- 6 digital multifunction inputs
- 2 digital configurable as analog input.

PROGRAMMABLE OUTPUTS

1 relay with changeover contact; 1 relay with NO contact; 1 transistor; 1 analog configurable as 0-10VDC or 4-20mA.

PROTECTIONS

- Overcurrent and overvoltage
- Input and output phase loss
- Drive, motor and braking resistor overload
- Drive overtemperature and excessive torque Earth/ground fault.

SPECIAL FUNCTIONS

- PID function for pump and fan application
- Dual set of independent parameters and ramps for two different motor controls
- Automatic restarting and instantaneous speed tuning
- 15 viewable frequency values
- DC-Bus access for DC power supply
- Capacitor pre-charge circuit
- Integrated dynamic braking circuit; optional external braking resistor
- Motor control: constant torque V/f, variable torque, sensorless vector
- Automatic motor torque boost control
- Regenerative energy control

- DC injection braking
 Auto-tuning
 Frequency potentiometer (speed adjustment via 2 external pushbuttons)

- Quick parameter search and programming Sequential starting control for sets of motors SLEEP function: automatic motor stopping after continuous running at minimum frequency
- Start-up DC injection
 OVERRIDE function for summing analog VIA-VIB inputs.

Operational characteristics

- Input voltage:
- VFS11... 380-500VAC three-phase
- Output voltage: ≤ input voltage
 Rated operational current le:

 VFS11... 1.5-33A three-phase
 Mains voltage: 50/60Hz

- Output frequency: 0-500Hz
 Frequency modulation: 2-16kHz
 Current overload: 150% for 60s; 200% for 0.5s
 Low speed torque: 150% 1Hz
- IEC degree of protection: IP20; IP55 on request
- Ambient conditions
- Operating temperature: -10...+60°C
- Maximum altitude: 1000m
- Relative humidity: 20-93% (with no condensing).

Certifications and complience

Certifications obtained: UL Listed for USA and Canada (File E204788) as Power Conversion Equipment; CSA certified for Canada (File 231252) as Motor Controllers - Miscellaneous; AS C-tick Compliant with standards: EN 50178, IEC/EN 61800-3 - first environment cat. C2 or second environment cat. C3, UL508, CSA C22.2 n° 14.

VFPS1 three-phase type



Three-phase supply @. EMC suppressor built in.

Order code

LIVIO Supprossor built					
VFPS1 4185PL WP	41	18.5	25	1	22.200
VFPS1 4220PL WP	48	22	30	1	23.700
VFPS1 4300PL WP	66	30	40	1	32.500
VFPS1 4370PL WP	79	37	50	1	32.800
VFPS1 4450PL WP	94	45	60	1	54.000
VFPS1 4550PL WP	116	55	75	1	54.000
VFPS1 4750PL WP	160	75	100	1	54.000
VFPS1 4900PC WP	179	90	125	1	100.000
VFPS1 4110KPC WP	215	110	150	1	100.000
VFPS1 4132KPC WP	259	132	200	1	108.000
VFPS1 4160KPC WP	314	160	250	1	118.000
VFPS1 4220KPC WP	427	220	350	1	161.000
VFPS1 4250KPC WP	481	250	400	1	194.000
VFPS1 4280KPC WP	550	280	450	1	204.000
VFPS1 4315KPC WP	616	315	500	1	204.000
VFPS1 4400KPC WP	759	400	600	1	302.000
VFPS1 4500KPC WP	941	500	700	1	320.000
VFPS1 4630KPC WP	1181	630	1000	1	462.000

le

0

[A]

3-phase

[kW]

motor power at 400V

[HP]

- Operation up to 50°C without derating.
- Three-phase supply voltage 380...480VAC 50/60Hz for 18.5 to 110kW

Three-phase supply voltage 380...440VAC 50Hz / 380...480VAC 60Hz for 132 to 630kW types.



General characteristics

Weight

Qty

per pkg

n° [kg] VFPS1 is a motor drive combining the most advanced and optimised mode for energy saving with a new more-compact and complete line as well as a new function software dedicated to pump and fan applications.

The on-board EMC surge suppressor and standard-supplied (up to 315kW type) DC inductance consent to radically reduce harmonic distortions and noise disturbances generated by the motor drive and to limit the input current to a maximum value of 1.1 times output

QUICK mode provides for a customised menu of 32 specific parameters for a single application, inhibiting access to all the other parameters.

SPEED REFERENCE SIGNALS

Feference signals for speed adjustment are obtained by:

External potentiometer: 1-10kΩ

Voltage signal: 0-10V or -10 to +10V

Current signal: 4-20mA or 0-20mA

- Keypad on front
- Remote keypad option
- 15 preset speeds via digital inputs
- RS485 serial signals.

- PROGRAMMABLE INPUTS
 Selectable PNP or NPN I/O logic
- 6 digital multifunction inputs
- 1 digital configurable as analog input.

PROGRAMMABLE OUTPUTS

- 1 relay with changeover contact
- 2 static
- 2 analog configurable as 0-10VDC, 0-20mA or 4-20mA 1 pulse train.

PROTECTIONS

- Overcurrent and overvoltage Output short circuit and earth leakage Drive, motor and braking resistor overload
- Drive overtemperature
- Motor stall
- Too low torque

SPECIAL FUNCTIONS

- PID function for pump and fan application Dual set of independent parameters and ramps for two different motor controls
- Automatic restarting and instantaneous speed tuning

- 15 viewable frequency values DC-Bus access for DC power supply Built-in DC reactor for reduced harmonic content at
- DC braking board standard-supplied up to 220kW/350HP rating; optional external braking resistors
- DC injection at starting
- Motor control: constant torque V/f, variable torque, torque boost with automatic starting, sensorless vector, vector control in closed-loop conditions
- Auto-tuning
- Frequency potentiometer; speed adjustment via
- 2 external push buttons
 SLEEP function: automatic motor stopping after
 continuous running at minimum frequency
 FIRE control function: specified speed maintained even
- in alarm conditions
 Built-in PTC thermistor input.

- Operational characteristics

 Output voltage: ≤ input voltage

 Rated operational current le: 41 to 1181A
- Mains voltage: 50/60Hz ±5%
- Output frequency: 0.5-500Hz

- Frequency modulation: 1-16kHz Current overload: 120% for 60s, 135% for 2s IEC degree of protection: IP00 for all except VFPS1 4185PL WP with IP20; IP55 on request
- Ambient conditions:

 - Operating temperature: -10...+60°C
 Maximum altitude: 1000m without derating; up to
 - 3000m with derating
 Relative humidity: 20-93% (with no condensing).

Certifications and compliance

Certifications obtained: UL Listed for USA and Canada (File E204788) as Power Conversion Equipment; CSA certified for Canada (File 231252) as Motor Controllers - Miscellaneous; AS C-tick. Compliant with standards: IEC/EN 61800-5-1, IEC/EN 61800-3 - first environment cat. C2 or second environment cat. C3, UL508, CSA C22.2 n° 14.

Accessories



IND...



ROF... ROPPE...

						ping	
	[A]		[kW]		[HP]	n°	[kg]
Three-phas	e indu	ıctances					
IND2020	12	1	0.75	-4	1-5	1	1.800
IND2030	25	0.6	5.5-1	1	7.5-15	1	2.700
IND3040	50	0.2	15-2	2	20-30	1	7.200
IND4040	100	0.15	30-4	5	40-60	1	14.500
IND4075	150	0.08	55-7	5	75-100	1	22.000
IND4090	300	0.04	90-1	10	125-150	1	27.000
IND5060	400	0.03	132-	160	200-250	1	38.000
IND5080	600	0.02	220-	250	350-400	1	45.000
IND7070	800	0.016	280-	315	450-500	1	62.000
Order code		Power		Cap	acity	Qty per pkg	Weight
		[W]		[Ω]		n°	[kg]
Braking res	istors						
R0F20100		200	200 100			1	0.220
R0F20150		200 150			1	0.220	
R0F35060		350				1	0.510
R0F50035		500	35			1	0.620
R0F80030		800	30			1	1.400
ROPPE1143	30	1300				1	4.000
ROPPE125	15	2200	2200 15			1	5.000
ROPPE1400	08	4000		8		1	7.000
ROPPE2400)3	8000 3		1	11.000		
Order code		Description			Qty per pkg	Weight	
0.1						n°	[kg]
Other acces	sorie				,	_	0.4=:
MITOSVT6		Remote control panel with functions: motor running, inverse rotation, speed adjustment and quantities control. IP65. Cable excluded			1	0.154	
RKP002Z		Remote control panel with functions: motor running, speed adjustment, quantities control and				1	0.070

parameter setting. IP20. Cable excluded @

Motor drive programming

Connecting cable RJ45 for MITOS..., RKP002Z or USB001Z to motor drive.

1kOhm potentiometer

1kOhm potentiometer

1 turn, complete with

Remote control panel for

quantities retention and

control of a system (PID:

pressure, temperature, etc). IP65. Cable excluded 2

operating knob

10 turns, complete with operating knob

module **299**

5m long

0.260

0.142

0.100

0.052

0.134

USB001Z

RJ45SH05000

51 PT25H101K

51 PT35H11K

MITOSVT6ECO

Order code le

mΗ

For motor

drive rating

Qty

per pkg Weight

- For other drive ratings, consult Customer Service:
- see contact details on inside front cover.

 RJ45 cable to be purchased separately; order code RJ45SH05000.

 Solution For USB001Z module → PC USB port connection,
- use a normal USB cable, USB1.1/2.0 compatible, type A-B connection, maximum recommendable
- Consult Customer Service request the motor drive remote control software; see contact details on inside front cover

General characteristics for IND...

The three-phase inductances, IND type, can be connected to the drives type VFNC3..., VFS11... and VFPS1... in the following ways:

- On the motor drive input to reduce the harmonic content upstream, with the subsequent reduction of input current consumption of the drive itself.

 On the motor drive output to limit peak voltages generated by drives on the motor or in case there are more motors connected in parallel, controlled simultaneously by the drive itself.

The inductances can be used at the motor drive input having single-phase power supply.

For the correct choice, select the inductance with le current rating equal to or greater than the rated current of the drive they will be used with.

Operational characteristics for IND...

- Class: H Current: 12-800A
- Ambient conditions:
- Operating temperature: -25...+100°C.

Reference standards for IND...

Compliant with standards: IEC/EN 61558-1.

Operational characteristics for ROF... and ROPPE...

- Maximum applicable voltage: 1000V
- Connection: With 250mm cable for ROF; directly on the resistor terminal for ROPPE
- Degree of protection: IP54 for R0F; IP20 for R0PPE.

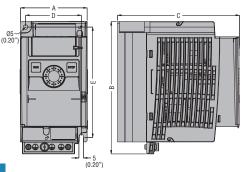
Drive type	Resistor type
VFS11 4004PL WP	R0F20150
VFS11 4007PL WP	R0F20150
VFS11 4015PL WP	R0F20100
VFS11 4022PL WP	R0F20100
VFS11 4037PL WP	R0F35060
VFS11 4055PL WP	R0F35060
VFS11 4075PL WP	R0F50035
VFS11 4110PL WP	R0F80030
VFS11 4150PL WP	R0F80030
VFPS1 4185PL WP	R0PPE11430
VFPS1 4220PL WP	R0PPE12515
VFPS1 4300PL WP	R0PPE12515
VFPS1 4370PL WP	ROPPE14008
VFPS1 4450PL WP	ROPPE14008
VFPS1 4550PL WP	R0PPE14008
VFPS1 4750PL WP	R0PPE14008
VFPS1 4900PL WP	ROPPE24003
VFPS1 4110KPC WP	R0PPE24003
VFPS1 4132KPC WP	R0PPE24003
VFPS1 4160KPC WP	R0PPE24003
VFPS1 4220KPC WP	ROPPE24003
VFPS1 4250KPC WP	6
VFPS1 4280KPC WP	6
VFPS1 4315KPC WP	6
VFPS1 4400KPC WP	6
VFPS1 4500KPC WP	6
VFPS1 4630KPC WP	6
6 For details and choice on braking	resistors, consult Customer

Service; see contact details on inside front cover.

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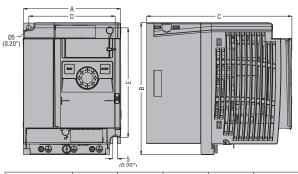
Motor drive

VFNC3S 2002PL W - VFNC3S 2007PL W



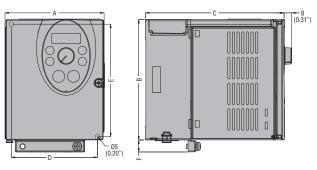
TYPE	A	В	С	D	E
VFNC3S 2002PL W	72 (2.83")	143 (5.63")	102 (4.01")	60 (2.36")	131 (5.16")
VFNC3S 2004PL W	72 (2.83")	143 (5.63")	121 (4.76")	60 (2.36")	118 (4.64")
VFNC3S 2007PL W	72 (2.83")	143 (5.63")	131 (5.16")	60 (2.36")	118 (4.64")

VFNC3S 2015PL W - VFNC3S 2022PL W



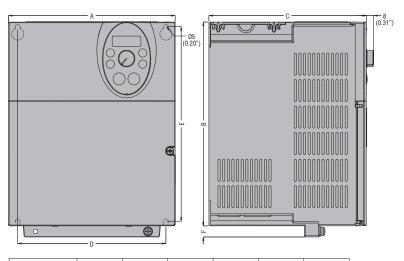
TYPE	A	В	C	D	E	
VFNC3S 2015PL W	105 (4.13")	142 (5,59")	156 (6.14")	93 (3.66")	118 (4.64")	
VFNC3S 2022PL W	105 (4.13")	142 (5,59")	156 (6.14")	93 (3.66")	118 (4.64")	

VFS11 4004PL WP - VFS11 4037PL WP



TYPE	Α	В	С	D	E	F
VFS11 4004PL WP	105 (4.13")	130 (5.11")	150 (5.90")	93 (3.66")	121.5 (4.78")	13 (0.51")
VFS11 4007PL WP	105 (4.13")	130 (5.11")	150 (5.90")	93 (3.66")	121.5 (4.78")	13 (0.51")
VFS11 4015PL WP	105 (4.13")	130 (5.11")	150 (5.90")	93 (3.66")	121.5 (4.78")	13 (0.51")
VFS11 4022PL WP	140 (5.51")	170 (6.69")	150 (5.90")	126 (4.96")	157 (6.18")	14 (0.55")
VFS11 4037PL WP	140 (5.51")	170 (6.69")	150 (5.90")	126 (4.96")	157 (6.18")	14 (0.55")

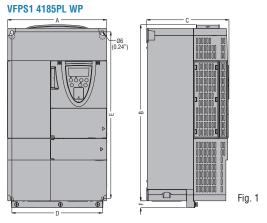
VFS11 4055PL WP - VFS11 4150PL WP



TYPE	A	В	С	D	E	F
VFS11 4055PL WP	180 (7.09")	220 (8.66")	170 (6.69")	160 (6.30")	210 (8.27")	12 (0.47")
VFS11 4075PL WP	180 (7.09")	220 (8.66")	170 (6.69")	160 (6.30")	210 (8.27")	12 (0.47")
VFS11 4110PL WP	245 (9.64")	310 (12.20")	190 (7.48")	225 (8.86")	295 (11.61")	19.5 (0.77")
VFS11 4150PL WP	245 (9.64")	310 (12.20")	190 (7.48")	225 (8.86")	295 (11.61")	19.5 (0.77")

Lovato

Motor drive



VFPS1 4220PL WP - VFPS1 4370PL WP

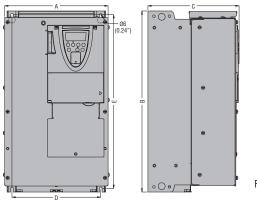
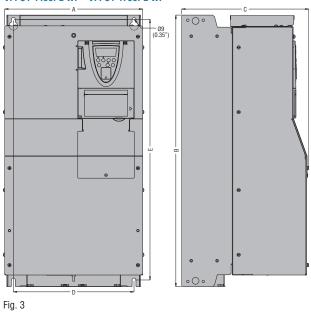


Fig. 2

VFPS1 4450PL WP - VFPS1 4750PL WP



VFPS1 4900PC WP VFPS1 4110KPC WP - VFPS1 4630KPC WP

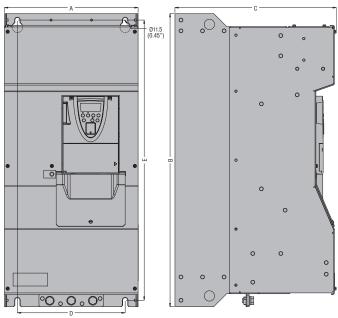


Fig. 4

TYPE	Fig.	A	В	С	D	E	F
VFPS1 4185PL WP	1	230 (9.05")	409 (16.10")	191 (7.52")	210 (8.27")	386 (15.20")	16 (0.63")
VFPS1 4220PL WP	2	240 (9.45")	420 (16.53")	212 (8.35")	206 (8.11")	403 (15.87")	_
VFPS1 4300PL WP	2	240 (9.45")	550 (21.65")	242 (9.53")	206 (8.11")	529 (20.83")	_
VFPS1 4370PL WP	2	240 (9.45")	550 (21.65")	242 (9.53")	206 (8.11")	529 (20.83")	_
VFPS1 4450PL WP	3	320 (12.60")	630 (24.80")	290 (11.42")	280 (11.02")	605 (23.82")	_
VFPS1 4550PL WP	3	320 (12.60")	630 (24.80")	290 (11.42")	280 (11.02")	605 (23.82")	_
VFPS1 4750PL WP	3	320 (12.60")	630 (24.80")	290 (11.42")	280 (11.02")	605 (23.82")	_
VFPS1 4900PC WP	4	310 (12.20")	680 (26.77")	375 (14.76")	250 (9.84")	650 (25.59")	_
VFPS1 4110KPC WP	4	310 (12.20")	680 (26.77")	375 (14.76")	250 (9.84")	650 (25.59")	_
VFPS1 4132KPC WP	4	350 (13.78")	782 (30.79")	375 (14.76")	298 (11.73")	758 (29.84")	_
VFPS1 4160KPC WP	4	330 (12.99")	950 (37.40")	377 (14.84")	285 (11.22")	920 (36.22")	_
VFPS1 4220KPC WP	4	430 (16.93")	950 (37.40")	377 (14.84")	350 (13.78")	920 (36.22")	_
VFPS1 4250KPC WP	4	585 (23.03")	950 (37.40")	377 (14.84")	540 (21.26")	920 (36.22")	_
VFPS1 4280KPC WP	4	585 (23.03")	950 (37.40")	377 (14.84")	540 (21.26")	920 (36.22")	_
VFPS1 4315KPC WP	4	585 (23.03")	950 (37.40")	377 (14.84")	540 (21.26")	920 (36.22")	_
VFPS1 4400KPC WP	4	880 (34.64")	1150 (45.27")	377 (14.84")	831 (32.71")	1120 (44.09")	_
VFPS1 4500KPC WP	4	880 (34.64")	1150 (45.27")	377 (14.84")	831 (32.71")	1120 (44.09")	_
VFPS1 4630KPC WP	4	1108 (43.62")	1150 (45.27")	377 (14.84")	1065 (41.93")	1120 (44.09")	_