

ENG

DC ARMATURE CONVERTERS

TPD32-EV

GEFRAN





THE ACKNOWLEDGED INTERNATIONAL LEADER

Thanks to forty years of experience, Gefran is the world leader in the design and production of solutions for **measuring, controlling, and driving industrial production processes.**

We have 14 branches in 12 countries and a network of over 80 worldwide distributors.



QUALITY AND TECHNOLOGY

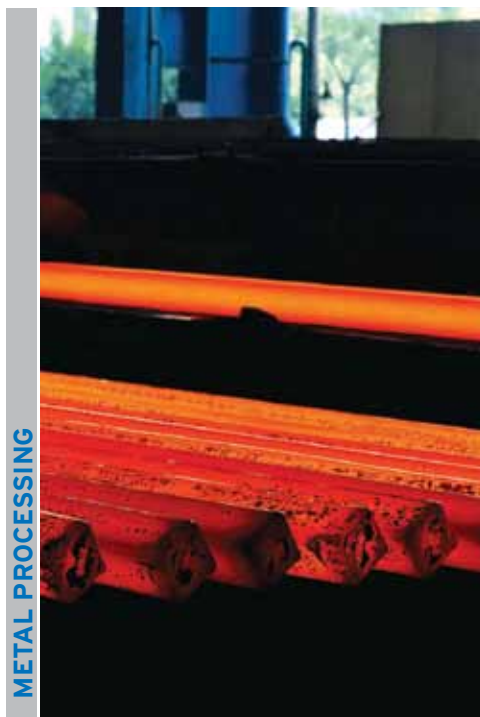
TPD32-EV DC drive series is a product of the ever growing technological demands of modern industrial systems, and draws on Gefran's years of experience in the field of DC motor speed control.

This is available in a wide range of motor power ratings and power supply types and it offers solutions for both 2 quadrant and 4 quadrant operation and system solution as 12 pulses parallel and series configuration.

Designed to minimize user system requirements, this range offers a range of functions and dedicated application packages to cover the most complex requirements of modern industrial automation systems.



INDUSTRIAL HOISTING



METAL PROCESSING



TEST BENCHES

AUTOMATION SOLUTIONS



PERFORMANCE

In addition to foreseeing the market's application needs, Gefran forms partnerships with its customers to find **the best way to optimise and boost the performance of various applications.** Gefran products communicate with one another to provide integrated solutions, and can dialogue with devices by other companies thanks to compatibility with numerous fieldbuses.



SERVICES

PRE AND POST SALES

A team of Gefran experts works with the customer to select the ideal product for its application and to help install and configure devices (technohelp@gefran.com).

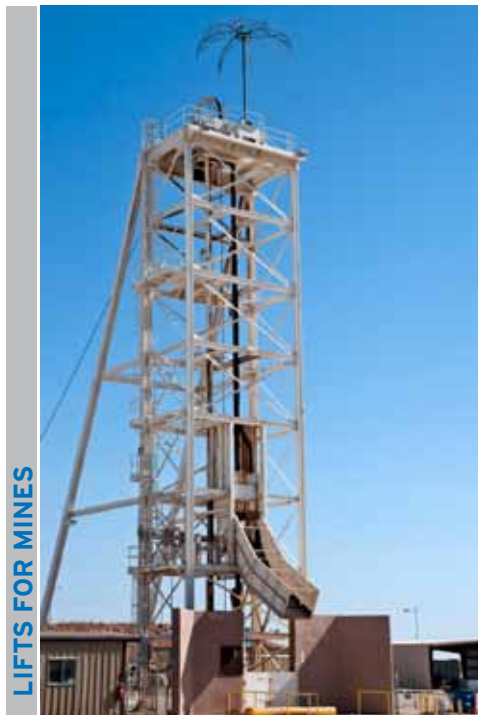
TRAINING

Gefran offers a wide range of courses at different levels for the technical-commercial study of the Gefran product range as well as specific courses on demand.

MARKETS



PLASTIC AND RUBBER PROCESSING



LIFTS FOR MINES



AMUSEMENT PARKS



Series TPD32 EV -...-2B/4B	Series TPD32 EV-CU	Series TPD32 EV-FC
<p>TPD32-EV DC drive series is a product of the ever growing technological demands of modern industrial systems, and draws on Gefran's years of experience in the field of DC motor speed control.</p> <p>This is available in a wide range of motor power ratings and power supply types and it offers solutions for both 2 quadrant and 4 quadrant operation and system solution as 12 pulses parallel and series configuration.</p> <p>Designed to minimize user system requirements, this range offers a range of functions and dedicated application packages to cover the most complex requirements of modern industrial automation systems.</p>	<p>TPD32 CU regulation control units are ideal for controlling the full range of external power bridges available on the market. The regulation control unit implements all the control systems required of an armature converter, including snubber filters, field regulator, regulation card, for simple, immediate power structure customisation.</p>	<p>Series of converters designed to supply highly inductive loads such as electromagnets, chokes, synchronous motor excitation circuits, galvanic applications, etc.</p>

POWER RATINGS

	TPD32 EV-500/...	TPD32 EV-575/...	TPD32 EV-690/...
2 quadrant	(..-2B): from 20A up to 3300A	(..-2B): from 280A up to 2300A	(..-2B): from 560A up to 3300A
4 quadrant	(..-4B): from 20A up to 3300A	(..-4B): from 280A up to 2300A	(..-4B): from 560A up to 3300A

Three-phase power circuit (U/V/W)

TPD32 EV-500/...

- 230 VAC ±10%, 50/60Hz ±5%
- 400 VAC ±10%, 50/60Hz ±5%
- 440 VAC ±10%, 50/60Hz ±5%
- 460 VAC ±10%, 50/60Hz ±5%
- 480 VAC ±10%, 50/60Hz ±5%
- 500 VAC ±10%, 50/60Hz ±5%
- 2 quadrant (..-2B): from 20A up to 3300A
- 4 quadrant (..-4B): from 20A up to 3300A

TPD32 EV-575/...

- 230 VAC ±10%, 50/60Hz ±5%
- 400 VAC ±10%, 50/60Hz ±5%
- 440 VAC ±10%, 50/60Hz ±5%
- 460 VAC ±10%, 50/60Hz ±5%
- 480 VAC ±10%, 50/60Hz ±5%
- 500 VAC ±10%, 50/60Hz ±5%
- 575 VAC ±10%, 50/60Hz ±5%
- 2 quadrant (..-2B): from 280A up to 2300A
- 4 quadrant (..-4B): from 280A up to 2300A

TPD32 EV-690/...

- 230 VAC ±10%, 50/60Hz ±5%
- 400 VAC ±10%, 50/60Hz ±5%
- 440 VAC ±10%, 50/60Hz ±5%
- 460 VAC ±10%, 50/60Hz ±5%
- 480 VAC ±10%, 50/60Hz ±5%
- 500 VAC ±10%, 50/60Hz ±5%
- 575 VAC ±10%, 50/60Hz ±5%
- 690 VAC ±10%, 50/60Hz ±5%
- 2 quadrant (..-2B): from 560A up to 3300A
- 4 quadrant (..-4B): from 560A up to 3300A

Single-phase field circuit (U1/V1)

- 230 VAC ±10%, 50/60Hz ±5%
- 400 VAC ±10%, 50/60Hz ±5%
- 460 VAC ±10%, 50/60Hz ±5%

Single-phase regulation circuit (U2/V2)

- 115 VAC ±15%, 50/60Hz ±5%
- 230 VAC ±15%, 50/60Hz ±5%

TPD32 EV-CU-230/500-...:

230 VAC ... 500 VAC ±10%, 50/60Hz ±5%

TPD32 EV-CU-575/690-...:

575 VAC ... 690 VAC ±10%, 50/60Hz ±5%

TPD32 EV-FC-200/...:

60 VAC ... 200 VAC ±10%, 50/60Hz ±5%

TPD32 EV-FC-500/...:

230 VAC ... 500 VAC ±10%, 50/60Hz ±5%

The screenshot displays the GEF-RAN Drives software interface. At the top, there are four tabs: DC Converter, Inverter, LIA, and ServoDrives. Below these are images of the respective hardware units. The main area contains several technical diagrams and control panels:

- Top Right:** A graph showing 'Constant Torque' and 'Constant Power' regions. The y-axis is labeled 'Output Power' and the x-axis is 'Speed'. A red line indicates 'Ramp Profile' and a blue curve indicates 'Constant Power'. A 'Field regulator management' panel is visible on the right.
- Middle Right:** A schematic diagram of an electrical circuit showing a motor (M) connected to a power source (CA3) through various components like a capacitor and a diode.
- Center:** A large block diagram titled 'DRIVE KEYPAD (for DIGITAL inputs)'. It shows the flow of digital signals from a keypad through various control blocks like 'Digital Converter', 'Speed reference selection', and 'Speed feedback' to a '20K' control unit. It also includes a 'Speed reference selection' sub-diagram.
- Bottom Left:** A smaller schematic diagram showing a motor connected to a power source.

GF-eXpress PROGRAMMING SOFTWARE

All drives and automation devices manufactured by the GEF-RAN group (PLC, HMI, instrumentation, etc.) can be programmed via PC using the GF-eXpress configurator. This PC tool enables complete programming and control of the product, based on a powerful, user-friendly and intuitive software platform:

- > Programming with parameter list or block diagrams
- > Integrated oscilloscope
- > Multi-drop network management with up to 32 inverters.



TPD32-EV



Wide range of power supplies
A single product for all power supply types, from 230Vac to 690Vac.

Serial communication
For programming with PC, the RS485 serial line with Modbus RTU protocol is standard on the TPD32-EV.

Fieldbus cards (optional)
Interfacing with the most commonly-used fieldbus systems: ProfibusDP (SBI-PDP-32), CANopen (SBI-COP) and DeviceNet (SBI-DN)

TBO-32 - I/O expansion card
Converter standard input / output expansion card:
4 digital inputs (0Vdc ...+3Vdc: 0 ... 0.4mA ; +15Vdc ... +30Vdc: 3 ... 6mA)
4 digital outputs (+15Vdc ... +30Vdc, max 50mA)
2 analog outputs ($\pm 10V$, max 5mA).

Overload
Programmable up to 200% with dedicated firmware function.

Programming keypad
The optional KB-TPD32-EV programming keypad featuring full display of parameters and variables makes the converter extremely intuitive and easy to use.

Field regulator
Integrated field regulator on all the range, 1ph supply:
230Vac...460Vac, 50/60Hz, rated currents from 10 to 70A.



<p>Standard supply configuration</p>	<ul style="list-style-type: none"> • Speed feedback via tachogenerator and/or digital or sinusoidal encoder; • Digital I/O logic control in PNP and/or NPN configuration; • Analog inputs: 3 Differential, 12 programmable Bits, selectable for ± 10 VDC, 0 - 20 mA, 0 - 10 VDC, 4 - 20 mA; • 2 Analog outputs ± 10Vdc; • 2 encoder inputs: sinusoidal (power supply at 5 V) and digital (power supply at 24 V); • 1 Tachogenerator input; • 8 Digital inputs (4 fixed + programmable); • 4 programmable digital outputs; • Relay outputs: 1 Drive OK normally closed contact, 1 programmable normally closed contact; • 1 Motor thermistor input; • RS485 Serial line (Modbus RTU protocol); • Programmable overload up to 200%; • Interfacing with fieldbus protocol as: Profibus DP[®], CANopen[®] and DeviceNet; • LED diagnostics module. 		
<p>Precision</p>	<p>Speed control</p>	<p>with sinusoidal encoder: typically 0.01% with digital encoder: typically 0.02% with tachogenerator: typically 0.1%</p>	
	<p>Torque control</p>	<p>typically 0.2%</p>	
	<p>Inputs/ Analog Outputs</p>	<p>11 bit + sign</p>	
	<p>Digital references</p>	<p>15 bit + sign</p>	
<p>Integrated System Technology</p>	<p>Quick start up; Autotuning of the speed and current regulators (*); 5 Independent programmable Multi-ramps; Programmable Linear and "S" shaped ramps; Seven Programmable Multi-speeds; Independent regulation of the Min/Max speed for each direction sense of rotation;</p> <p>Current limitation in accordance with the speed; Adaptive gains of the speed regulator; Independent management of the integral gain at zero speed; Programmable overload control; Jog function; Motorpotentiometer function; I²t motor protection;</p> <p>PID function block; Servodiameter control function;"Speed Draw" function; "Autocapture" function (Flying restart); "Droop" function.</p>		
<p>Options</p>	<ul style="list-style-type: none"> • Programming keypad KB; • I/O expansion card TBO-32; • Profibus interface SBI-PDP-32; • DeviceNet interface SBI-DN; • CANopen interface SBI-COP; • Programmable APC300 application card with Master CAN I/O controller and integrated Fast Link Drive to Drive communication; • Supplementary encoders management DEII. 		
<p>Accessories</p>	<ul style="list-style-type: none"> • Dedicated EMC filters (in accordance with EN61800-3); • Input choke (standardised for the whole line); • Programming remote keypad kit with 2 meters of cable included; • RS485 serial line kit for direct PC communication. 		
<p>Environmental conditions</p>	<ul style="list-style-type: none"> • Protection degree: IP20 up to 1000A (...2B) and 1050A (...4B), IP20/IP00 for bigger powers. • Operating temperature: from 0°C to 40°C, from + 40°C to +50°C with derating. • Storage temperature: -25°C...+55°C (Class 1K4 - EN50178). • Humidity: from 5% to 85%, relative humidity (without condensation) or ice formation (Class 3K3 under EN50178). • Altitude: up to 1000 metres above sea level; above this level the current must be reduced by 1.2% per 100 metre increase. 		
<p>Standards and Marks</p>	<p>CE</p>	<p>complies with the EEC directive concerning low voltage equipment.</p>	
	<p>UL, cUL</p>	<p>complies with directives for the American and Canadian market (TPD32 EV-...-NA series).</p>	
	<p>EMC</p>	<p>complies with the EEC directive - EN 61800-3 concerning electromagnetic compatibility with the use of optional filters.</p>	

(*) Except the TPD32-EV-FC... series.

CONVERTER SELECTION - INPUT AND OUTPUT DATA

TPD32 EV-...																					
TPD32 EV Standard sizes	TPD32 EV-...-NA American sizes	2 quadrant : 2B	4 quadrant : 4B	Frame	U _{LN} AC Input Voltage			AC Input Frequency	I _{DN} Rated Output Current Standard sizes	I _{DN} Rated Output Current American sizes (1)	I _{OVLD} Output Current Overload	U _{DN} DC Output Voltage									
					TPD32 EV-500	TPD32 EV-575	TPD32 EV-690					TPD32 EV-500		TPD32 EV-575		TPD32 EV-690		AC Input Voltage for Field Circuit	U _{FN} DC Field Voltage * (0.85 U _{LN})	I _{FN} Field Current @ 40°C	AC Input Voltage of regulation part
					230 ... 500Vac ± 10%, 3ph	230 ... 575Vac ± 10%, 3ph	230 ... 690Vac ± 10%, 3ph					2B	4B	2B	4B	2B	4B				
					[Vac]	[Vac]	[Vac]					[Hz]	[A]	[A]	[A]	[Vac]	[Vdc]				
20	17	•	•	A1	•			20	17	Programmable I _{DN} up to 200%	600 Vbc 520 Vdc 680 Vbc 600 Vbc 810 Vbc 720 Vbc	230 Vac ± 15% or 400 Vac ± 15% or 460 Vac ± 10%, single-phase, 50/60Hz ±5%	Fissa o regolabile: 200 Vdc (for 230 Vac) or 310 Vdc (for 400 Vac) or 360 Vdc (for 460 Vac)	115 Vac ± 15% or 230 Vac ± 15%, single-phase, 50/60Hz ±5%	10						
40	35	•	•	A1	•		40	35	10												
70	56	•	•	A2	•		70	56	10												
110	88	•	•	A3	•		110	88	10												
140	112	•	•	A3	•		140	112	14												
185	148	•	•	A3	•		185	148	14												
280	224	•	•	B1	•	•	280	224	20												
350	280	•	•	B1	•	•	350	280	20												
420	336	•	•	B1	•	•	420	336	20												
500	400	•	•	B1	•	•	500	400	20												
560	360	•	•	C		•	560	360	25												
650	450	•	•	B2	•	•	650	450	20												
700	490	•	•	C		•	700	490	25												
770	560	•	•	C	•		770	560	25												
900	650	•	•	C		•	900	650	25												
1000	750	•		C		•	1000	750	25												
1050	750		•	C		•	1050	750	25												
1000	800	•		C	•		1000	800	25												
1050	850		•	C	•		1050	850	25												
1300	920		•	D		•	1300	920	40												
1300	980		•	D		•	1300	980	40												
1300	980	•		D		•	1300	980	40												
1400	1000	•	•	D	•		1400	1000	40												
1600	1200	•	•	D	•	•	1600	1200	40												
1900	1450	•	•	D		•	1900	1450	40												
2000	1500	•	•	D	•	•	2000	1500	40												
2100	1650	•	•	D		•	2100	1650	70												
2300	1800	•	•	D		•	2300	1800	70												
2400	1850	•	•	D	•		2400	1850	70												

(1): 150% Overload factory settings.

TPD32 EV-.../...-...-... External Bridge

TPD32 EV Standard sizes	TPD32 EV Standard sizes	2 quadrant : 2B	4 quadrant : 4B	Frame	U _{LN} AC Input Voltage		AC Input Frequency	I _{DN} Rated Output Current Standard sizes	I _{DN} Rated Output Current American sizes (1)	I _{ovLD} Output Current Overload	U _{DN} DC Output Voltage				AC Input Voltage for Field Circuit	U _{FN} DC Field Voltage * (0.85 U _{LN})	I _{FN} Field Current @ 40°C	AC Input Voltage of regulation part
					TPD32 EV-500	TPD32 EV-690					TPD32 EV-500		TPD32 EV-690					
					[V _{AC}]	[V _{AC}]					[A]	[A]	[V _{AC}]	[V _{dc}]				
1200	1000	•		E	230 V _{AC} ... 500 V _{AC} ± 10%, 3-phase		50/60 Hz ±5%	1200	1000	Programmable I _{DN} up to 200%	600 V _{dc}	4B			Fixed or adjustable: 200 V _{dc} (for 230 V _{AC}) or 310 V _{dc} (for 400 V _{AC}) or 360 V _{dc} (for 460 V _{AC})		40	
1500	1300	•	•	E				1500	1300								40	
1700	1350		•	E				1700	1350								40	
1800	1400	•		E				1800	1400								40	
2000	1500	•	•	E				2000	1500								40	
2400	1800	•	•	E				2400	1800		70							
2700	2000	•	•	E				2700	2000		70							
2900	2200	•		E				2900	2200		70							
3300	2350	•	•	E				3300	2350		70							
1010	900	•	•	E				230 V _{AC} ... 690 V _{AC} ± 10%, 3-phase			1010	900		810 V _{dc}			2B	
1400	1150	•	•	E	1400	1150	40											
1700	1350	•	•	E	1700	1350	40											
2000	1500	•	•	E	2000	1500	40											
2400	1800	•	•	E	2400	1800	70											
2700	2000	•	•	E	2700	2000	70											
3300	2350	•	•	E	3300	2350	70											

(1): 150% Overload factory settings.

Note:

A 12-impulse version of the converter is also available. This has two 6-impulse bridges with two different configurations: parallel (TPD32-EV-...-12P) or serial (TPD32-EV-...- 12S).

12 Pulses PARALLEL Configuration

The motor gets the sum of the DC current of two converters. Thus the current is doubled. The Power range of the drive is extended by doubling dc drive output current value. Contact Gefran Sales office for interbridge reactor calculation.

12 Pulses SERIES Configuration

The motor gets the sum of the DC voltage of two converters. Thus the voltage is doubled. Possibility of emergency operation with one converter in case of a breakdown in the other converter for series configuration (with full torque and with 50 % of the former maximum armature voltage). DC voltage range is extended by doubling dc drive output voltage value. In order to divide symmetrically the total armature voltage in the range of the small armature current or armature current = 0, symmetry resistances must be utilized and connected in parallel to the individual current converters connected in series. The symmetry resistances (R_{sym}) should be dimensioned in such a way that a cross current of at least 100 mA flows at maximum armature voltage.

CONVERTER SELECTION - INPUT AND OUTPUT DATA

TPD32 EV-FC - Special converter for inductive loads

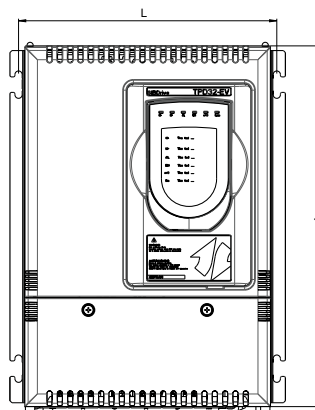
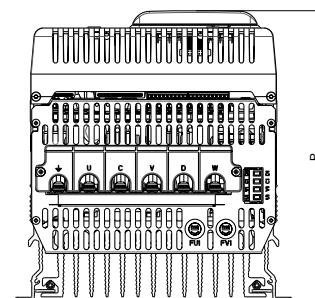
TPD32 EV-FC Sizes	2 quadrant : 2B	4 quadrant : 4B	Frame	U _{LN} AC Input Voltage	AC Input Frequency	I _{DN} Rated Output Current Standard sizes	I _{ovLD} Output Current Overload	U _{DN} DC Output Voltage		AC Input Voltage of regulation part
				[V _{ac}]	[Hz]	[A]	[A]	2B	4B	[V _{ac}]
20	•	•	A1	TPD32-EV-FC-200: 60 V _{ac} ... 200 V _{ac} ± 10%, 3-phase TPD32-EV-FC-500/...: 230 V _{ac} ... 500 V _{ac} ± 10%, 3-phase	50/60 Hz ±5%	20	Programmable I _{DN} up to 200%	600 V _{dc}	TPD32-EV-FC-200/...: 210 V _{dc} TPD32-EV-FC-500/...: 520 V _{dc}	115 V _{ac} ± 15% or 230 V _{ac} ± 15%, single-phase, 50/60Hz ±5%
40	•	•	A1			40				
70	•	•	A2			70				
110	•	•	A3			110				
140	•	•	A3			140				
185	•	•	A3			185				
280	•	•	B1			280				
350	•	•	B1			350				
420	•	•	B1			420				
500	•	•	B1			500				
650	•	•	B2			650				

TPD32 EV -CU - External bridge control unit

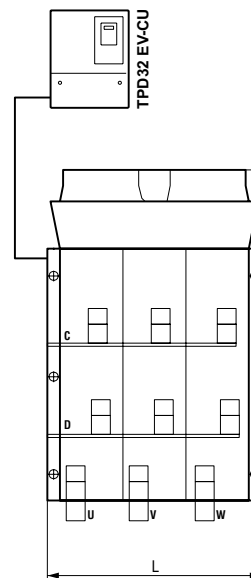
TPD32-EV-CU Sizes	2 quadrant / 4 quadrant	Frame	U _{LN} AC Input Voltage	AC Input Frequency	I _{DN} Rated Output Current (selectable)	I _{ovLD} Output Current Overload	U _{DN} DC Output Voltage	AC Input Voltage for Field Circuit	U _{FN} DC Field Voltage (0.85 * U _{LN})	I _{FN} Field Current @ 40°C	AC Input Voltage of regulation part			
			[V _{ac}]	[Hz]	[A]	[A]	[V _{dc}]	[V _{ac}]	[V _{dc}]	[A]	[V _{ac}]			
TPD32-EV-CU-230/500-THY1-40	•	A1	230 ... 500 V _{ac} ± 10%, 3-phase	50/60 Hz ±5%	4 ... 20000 A	Programmable I _{DN} up to 200%	520/600 V _{dc}	230 V _{ac} ± 15% or 400 V _{ac} ± 15% or 460 V _{ac} ± 10%, single-phase, 50/60Hz ± 5%	Fixed or adjustable: 200 V _{dc} (for 230 V _{ac}) or 310 V _{dc} (for 400 V _{ac}) or 360 V _{dc} (for 460 V _{ac})	40	115 V _{ac} ± 15% or 230 V _{ac} ± 15%, single-phase, 50/60Hz ±5%			
TPD32-EV-CU-230/500-THY2-40	•	A1								40				
TPD32-EV-CU-230/500-THY1-70	•	A1								70				
TPD32-EV-CU-230/500-THY2-70	•	A1								70				
TPD32-EV-CU-575/690-THY1-40	•	A1	575 ... 690 V _{ac} ± 10%, 3-phase				50/60 Hz ±5%	4 ... 20000 A	Programmable I _{DN} up to 200%	720/810 V _{dc}		Fixed or adjustable: 200 V _{dc} (for 230 V _{ac}) or 310 V _{dc} (for 400 V _{ac}) or 360 V _{dc} (for 460 V _{ac})	40	115 V _{ac} ± 15% or 230 V _{ac} ± 15%, single-phase, 50/60Hz ±5%
TPD32-EV-CU-575/690-THY2-40	•	A1											40	
TPD32-EV-CU-575/690-THY1-70	•	A1											70	
TPD32-EV-CU-575/690-THY2-70	•	A1											70	

DIMENSIONS AND WEIGHTS

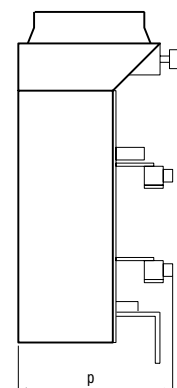
TPD32 EV Standard sizes	TPD32 EV-...-NA American sizes	Frame	Dimensions: W x H x d - mm ["]	Weight kg [lbs]
TPD32-EV-.../-20--A	TPD32-EV-.../-17--A-NA	A1	267 x 349 x 280 [10.5 x 13.7 x 10]	8.4 [18.5]
TPD32-EV-.../-40--A	TPD32-EV-.../-35--A-NA			8.8 [19.4]
TPD32-EV-.../-70--A	TPD32-EV-.../-56--A-NA			
TPD32-EV-.../-110--A	TPD32-EV-.../-88--A-NA	A3	267 x 349 x 280 [10.5 x 13.7 x 10]	10.8 [23.8]
TPD32-EV-.../-140--A	TPD32-EV-.../-112--A-NA			
TPD32-EV-.../-185--A	TPD32-EV-.../-148--A-NA			
TPD32-EV-.../-280--B	TPD32-EV-.../-224--B-NA	B1	311 x 388 x 343.6 [12.2 x 12.3 x 13.5]	25.5 [56.2]
TPD32-EV-.../-350--B	TPD32-EV-.../-280--B-NA			
TPD32-EV-.../-420--B	TPD32-EV-.../-336--B-NA			
TPD32-EV-.../-500--B	TPD32-EV-.../-400--B-NA	B2	311 x 388 x 373.6 [12.2 x 12.3 x 14.7]	32 [70.5]
TPD32-EV-.../-650--B	TPD32-EV-.../-450--B-NA			
TPD32-EV-.../-560--C	TPD32-EV-.../-360--C-NA	C	521 x 512 x 410 [20.5 x 20.2 x 16.1]	61 [134.5]
TPD32-EV-.../-700--C	TPD32-EV-.../-490--C-NA			65 [143.3]
TPD32-EV-.../-770--C	TPD32-EV-.../-560--C-NA			
TPD32-EV-.../-900--C	TPD32-EV-.../-650--C-NA			
TPD32-EV-.../-1000--C	TPD32-EV-575/...-750--C-NA	D	704 x 1435 x 536 [27.7 x 56.5 x 21.1]	72 [158.7]
TPD32-EV-.../-1050--C	TPD32-EV-500/...-800--C-NA			152 [335.1] (2B) 203 [447.5] (4B)
	TPD32-EV-500/...-850--C-NA			
TPD32-EV-...D/...-1300--D	TPD32-EV-.../-920--D-NA	D	704 x 1435 x 536 [27.7 x 56.5 x 21.1]	165 [363.8] (2B) 215 [474.0] (4B)
TPD32-EV-...D/...-1300--D	TPD32-EV-575/...-980--D-NA			
TPD32-EV-...D/...-1400--D	TPD32-EV-.../-1000--D-NA			
TPD32-EV-...D/...-1600--D	TPD32-EV-.../-1200--D-NA			
TPD32-EV-...D/...-1900--D	TPD32-EV-.../-1450--D-NA			
TPD32-EV-...D/...-2000--D	TPD32-EV-.../-1500--D-NA			
TPD32-EV-...D/...-2100--D	TPD32-EV-.../-1650--D-NA			
TPD32-EV-...D/...-2300--D	TPD32-EV-.../-1800--D-NA			
TPD32-EV-...D/...-2400--D	TPD32-EV-.../-1850--D-NA			
				191 [421.1] (2B) 241 [531.3] (4B)



TPD32 EV-CU	Frame	Dimensions: W x H x d - mm ["]	Weight kg (lbs)
TPD32-EV-CU-.../-THY1-40	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU-.../-THY2-40	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU-.../-THY1-70	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU-.../-THY2-70	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)



TPD32-EV External bridge	Frame	Dimensions: W x H x d - mm ["]	Weight kg (lbs)
TPD32 EV-690/840-1010-2B-E	E	500 x 760 x 275 [19.7 x 29.9 x 10.8]	70 [154.3]
TPD32 EV-500/600-1200-2B-E		500 x 570 x 275 [19.7 x 22.4 x 10.8]	65 [143.3]
TPD32 EV-690/840-1400-2B-E		500 x 760 x 275 [19.7 x 29.9 x 10.8]	70 [154.3]
TPD32 EV-500/600-1500-2B-E		500 x 760 x 275 [19.7 x 29.9 x 10.8]	70 [154.3]
TPD32 EV-690/840-1700-2B-E		620 x 764 x 360 [24.4 x 30.1 x 14.2]	100 [220.5]
TPD32 EV-500/600-1800-2B-E		500 x 760 x 275 [19.7 x 29.9 x 10.8]	70 [154.3]
TPD32 EV-500/600-2000-2B-E		500 x 760 x 275 [19.7 x 29.9 x 10.8]	70 [154.3]
TPD32 EV-690/840-2000-2B-E		620 x 764 x 360 [24.4 x 30.1 x 14.2]	100 [220.5]
TPD32 EV-500/600-2400-2B-E		620 x 764 x 360 [24.4 x 30.1 x 14.2]	100 [220.5]
TPD32 EV-690/840-2400-2B-E		712 x 775 x 395 [28.0 x 30.5 x 15.6]	140 [308.6]
TPD32 EV-500/600-2700-2B-E		712 x 785 x 395 [28.0 x 30.9 x 15.6]	140 [308.6]
TPD32 EV-690/840-2700-2B-E		712 x 775 x 395 [28.0 x 30.5 x 15.6]	140 [308.6]
TPD32 EV-500/600-2900-2B-E		712 x 775 x 395 [28.0 x 30.5 x 15.6]	140 [308.6]
TPD32 EV-500/600-3300-2B-E		780 x 1180 x 420 [30.7 x 46.5 x 16.5]	260 [573.2]
TPD32 EV-690/840-3300-2B-E		780 x 1180 x 420 [30.7 x 46.5 x 16.5]	260 [573.2]
TPD32 EV-690/720-1010-4B-E		E	500 x 1310 x 375 [19.7 x 51.6 x 14.8]
TPD32 EV-690/720-1400-4B-E	500 x 1310 x 375 [19.7 x 51.6 x 14.8]		130 [286.6]
TPD32 EV-500/520-1500-4B-E	500 x 1310 x 375 [19.7 x 51.6 x 14.8]		130 [286.6]
TPD32 EV-500/520-1700-4B-E	500 x 1310 x 375 [19.7 x 51.6 x 14.8]		130 [286.6]
TPD32 EV-690/720-1700-4B-E	620 x 1314 x 475 [24.4 x 51.7 x 18.7]		170 [374.8]
TPD32 EV-500/520-2000-4B-E	500 x 1310 x 375 [19.7 x 51.6 x 14.8]		130 [286.6]
TPD32 EV-690/720-2000-4B-E	620 x 1314 x 475 [24.4 x 51.7 x 18.7]		170 [374.8]
TPD32 EV-500/520-2400-4B-E	620 x 1314 x 495 [24.4 x 51.7 x 19.5]		170 [374.8]
TPD32 EV-690/720-2400-4B-E	712 x 1335 x 475 [28.0 x 52.6 x 18.7]		240 [529.1]
TPD32 EV-500/520-2700-4B-E	712 x 1335 x 490 [28.0 x 52.6 x 19.3]		240 [529.1]
TPD32 EV-690/720-2700-4B-E	712 x 1335 x 475 [28.0 x 52.6 x 18.7]		240 [529.1]
TPD32 EV-.../-3300-4B-E	780 x 1890 x 470 [30.7 x 74.4 x 18.5]		435 [959]





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