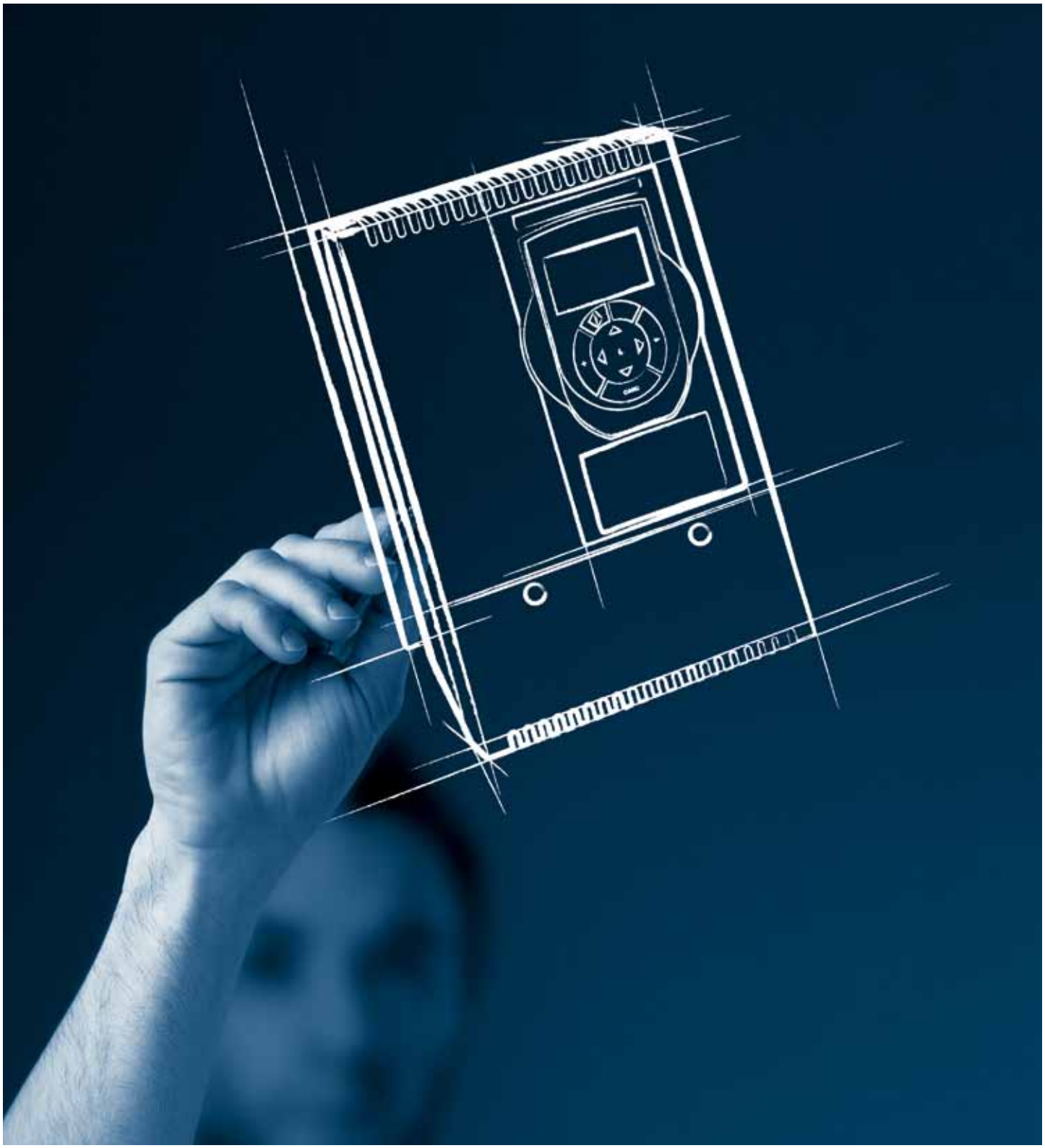
EN

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.

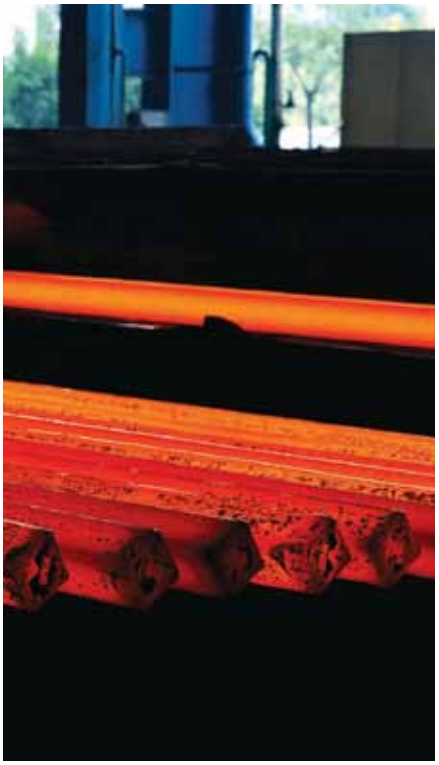
QUALITY AND TECHNOLOGY

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.

GEFRAN

INDUSTRIAL HOISTING

METAL PROCESSING



TEST BENCHES

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.

CANopen EtherCAT EtherNet/IP DeviceNet GDNET Modbus PROFIBUS PROFINET

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.

PLASTIC AND RUBBER PROCESSING

LIFTS FOR MINES

AMUSEMENT PARKS

Series TPD32 EV -...-2B/4B	Series TPD32 EV-CU	Series TPD32 EV-FC
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.	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.	Series of converters designed to supply highly inductive loads such as electromagnets, chokes, synchronous motor excitation circuits, galvanic applications, etc.

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%

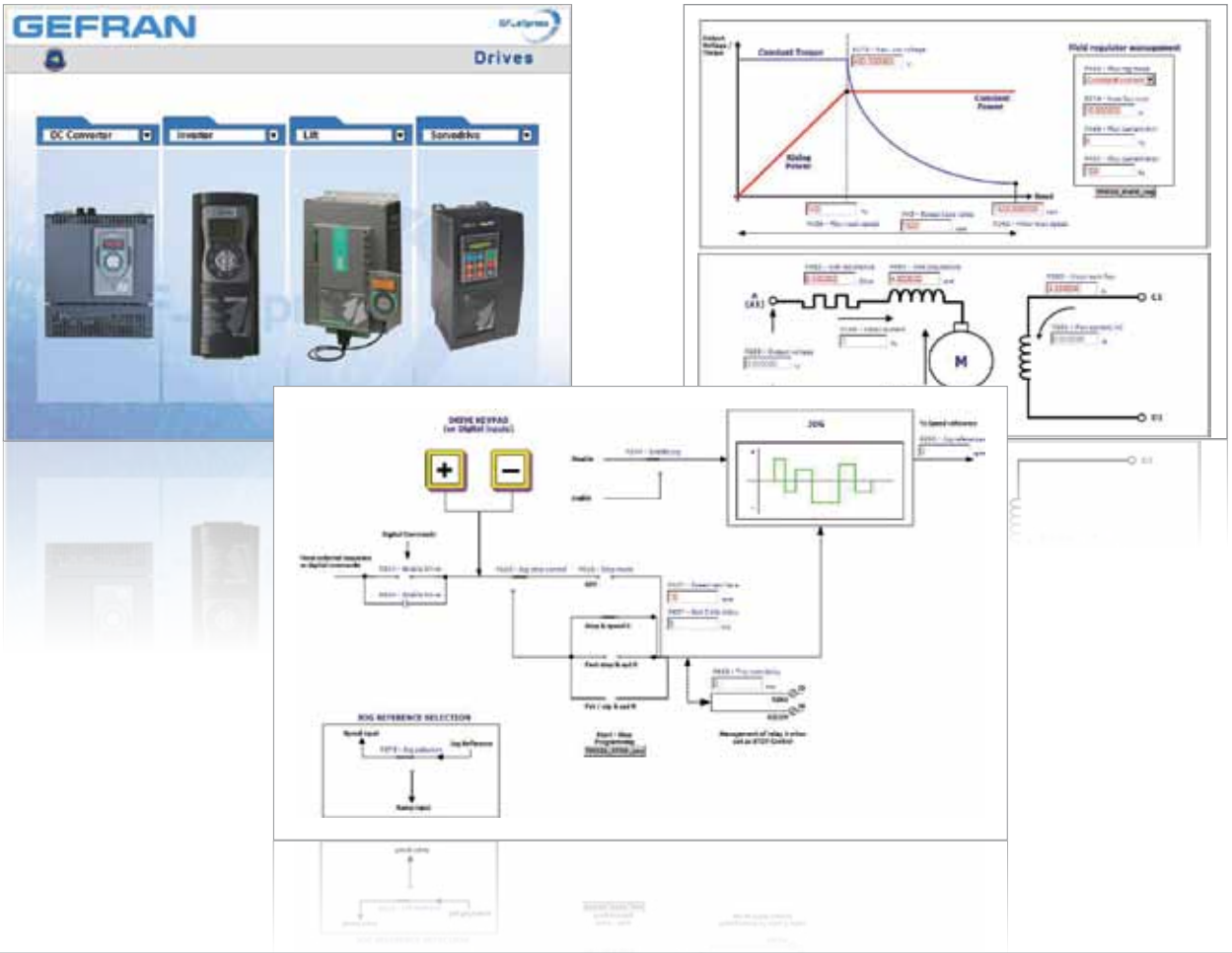
TPD32 EV-CU-230/500-...:
230 VAC ... 500 VAC ±10%, 50/60Hz ±5%

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%

SOFTWARE



GF-eXpress PROGRAMMING SOFTWARE

All drives and automation devices manufactured by the GEFRAN 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.

GF_eXpress

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)

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.

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 (±10V, max 5mA).

Overload
Programmable up to 200% with dedicated firmware function.

Standard supply configuration	• 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.	
Precision	Speed control	with sinusoidal encoder: typically 0.01% with digital encoder: typically 0.02% with tachogenerator: typically 0.1%
	Torque control	typically 0.2%
	Inputs/ Analog Outputs	11 bit + sign
	Digital references	15 bit + sign
Integrated System Technology	Quick start up; Autotuning of the speed and current regulators (*); 5 Independent programmable Multi-ramps; Programmable Linear and "S"shaped ramps; Seven Programmable Multispeeds; Independent regulation of the Min/Max speed for each direction sense of rotation; 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; I^2t motor protection; PID function block; Servodiameter control function;"Speed Draw" function; "Autocapture" function (Flying restart); "Droop" function.	
Options	• 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.	
Accessories	• 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.	
Environmental conditions	• 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.	
Standards and Marks	**CE**	complies with the EEC directive concerning low voltage equipment.
	UL, cUL	complies with directives for the American and Canadian market (TPD32 EV-...-NA series).
	EMC	complies with the EEC directive - EN 61800-3 concerning electromagnetic compatibility with the use of optional filters.

(*) 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						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-575	TPD32 EV-690					TPD32 EV-500		TPD32 EV-575		TPD32 EV-690					
					230 ... 500Vac ± 10%, 3ph	230 ... 575Vac ± 10%, 3ph	230 ... 690Vac ± 10%, 3ph														
					[VAC]	[VAC]	[VAC]	[Hz]	[A]	[A]	[A]	2B	4B	2B	4B	2B	4B	[VAC]	[VDC]	[A]	[VAC]
20	17	•	•	A1	•			50/60 Hz ±5%	20	17	Programmable I_{DN} up to 200%	600 VDC	520 VDC	680 VDC	600 VDC	810 VDC	720 VDC	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)	10	115 VAC ± 15% or 230 VAC ± 15%, single-phase, 50/60Hz ±5%
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					
					[VAC]	[VAC]	[Hz]	[A]	[A]	[A]	2B	4B	2B	4B	[VAC]	[Vdc]	[A]	[VAC]
1200	1000	•		E	230 VAC ... 500 VAC ± 10%, 3-phase		50/60 Hz ±5%	1200	1000	Programmable I_{DN} up to 200%	600 VDC	520 VDC			230 VAC ± 15% o 400 VAC ± 15% or 460 VAC ± 10%, single-phase, 50/60Hz ±5%	Fixed or adjustable: 200 VDC (for 230 VAC) or 310 VDC (for 400 VAC) or 360 VDC (for 460 VAC)	40	115 VAC ± 15% or 230 VAC ± 15%, single-phase , 50/60Hz ±5%
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 VAC ... 690 VAC ± 10%, 3-phase		1010	900				810 VDC	720 VDC			40	
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 (Rsym) 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

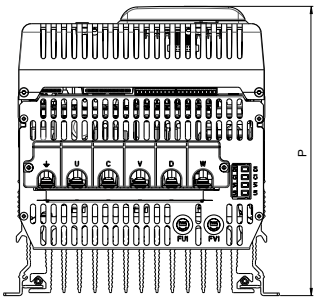
TPD32 EV-FC Sizes	2 quadrant : 2B	4 quadrant : 4B	Frame	U_{LN} AC Input Voltage	AC Input Frequency	I_{DN} Rated Output Current Standard sizes	I_{OVLD} Output Current Overload	U_{DN} DC Output Voltage		AC Input Voltage of regulation part
				[VAC]	[Hz]	[A]	[A]	2B	4B	[VAC]
20	•	•	A1	TPD32-EV-FC-200: 60 VAC ... 200 VAC ± 10%, 3-phase TPD32-EV-FC-500/...: 230 VAC ... 500 VAC ± 10%, 3-phase	50/60 Hz ±5%	20	Programmable I_{DN} up to 200%	600 VDC	TPD32-EV-FC-200/...: 210 VDC TPD32-EV-FC-500/...: 520 VDC	115 VAC ± 15% or 230 VAC ± 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				

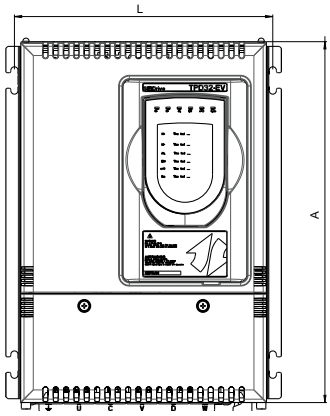
TPD32 EV -CU - External bridge control unit

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
			[VAC]	[Hz]	[A]	[A]	[Vdc]	[VAC]	[Vdc]	[A]	[VAC]
TPD32-EV-CU-230/500-THY1-40	•	A1	230 ... 500 VAC ± 10%, 3-phase	50/60 Hz ±5%	4 ... 20000 A	Programmable I_{DN} up to 200%	520/600 VDC	230 VAC ± 15% or 400 VAC ± 15% or 460 VAC ± 10%, single-phase, 50/60Hz ± 5%	Fixed or adjustable: 200 VDC (for 230 VAC) or 310 VDC (for 400 VAC) or 360 VDC (for 460 VAC)	40	115 VAC ± 15% o 230 VAC ± 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 VAC ± 10%, 3-phase				720/810 VDC			40	
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	

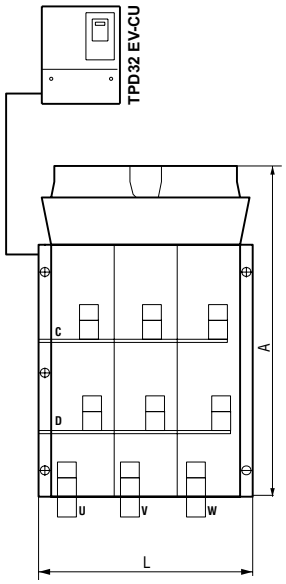
DIMENSIONS AND WEIGHTS

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			
TPD32-EV-.../...-70-..-A	TPD32-EV-.../...-56-..-A-NA	A2		8.8 [19,4]
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			
TPD32-EV-.../...-650-..-B	TPD32-EV-.../...-450-..-B-NA	B2	311 x 388 x 373.6 [12.2 x 12.3 x 14.7]	32 [70.5]
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			
TPD32-EV-.../...-770-..-C	TPD32-EV-.../...-560-..-C-NA			
TPD32-EV-.../...-900-..-C	TPD32-EV-.../...-650-..-C-NA			65 [143.3]
TPD32-EV-.../...-1000-..-C TPD32-EV-.../...-1050-..-C	TPD32-EV-575/...-750-..-C-NA TPD32-EV-500/...-800-..-C-NA TPD32-EV-500/...-850-..-C-NA			72 [158.7]
TPD32-EV-..-D./...-1300-..-D	TPD32-EV-.../...-920-..-D-NA	D	704 x 1435 x 536 [27.7 x 56.5 x 21.1]	152 [335.1] (2B) 203 [447.5] (4B)
TPD32-EV-..-D./...-1300-..-D	TPD32-EV-575/...-980-..-D-NA			
TPD32-EV-..-D./...-1400-..-D	TPD32-EV-.../...-1000-..-D-NA			165 [363.8] (2B) 215 [474.0] (4B)
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			191 [421.1] (2B) 241 [531.3] (4B)
TPD32-EV-..-D./...-2300-..-D	TPD32-EV-.../...-1800-..-D-NA			
TPD32-EV-..-D./...-2400-..-D	TPD32-EV-.../...-1850-..-D-NA			

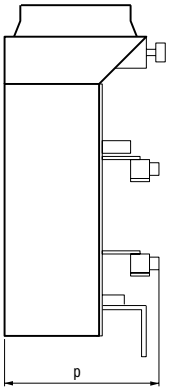




TPD32 EV-CU	Frame	Dimensions: W x H x d - mm ["]	Weight kg (lbs)
TPD32-EV-CU-.../...-THY1-40	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU -.../...-THY2-40	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU-.../...-THY1-70	A1	267 x 349 x 280 [10.5 x 13.75 x 10]	8.4 (18.5)
TPD32-EV-CU-.../...-THY2-70	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]	130 [286.6]
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]



COD. 1S4TEN - 03/2014

GEFRAN

GEFRAN HEADQUARTER
Via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) ITALY
Ph. +39 03098881
Fax +39 0309839063

Drive & Motion Control Unit
Via Carducci, 24
21040 GERENZANO (VA) ITALY
Ph. +39 02967601
Fax +39 029682653
info.motion@gefran.com
Technical Assistance:
technohelp@gefran.com
Customer Service
motioncustomer@gefran.com
Ph. +39 02 96760500
Fax +39 02 96760278

GEFRAN BENELUX NV
ENA 23 Zone 3, nr. 3910
Lammerdries-Zuid 14A
B-2250 OLEN
Ph. +32 (0) 14248181
Fax +32 (0) 14248180
info@gefran.be

GEFRAN DEUTSCHLAND GmbH
Philipp-Reis-Straße 9a
D-63500 Seligenstadt
Ph. +49 (0) 61828090
Fax +49 (0) 6182809222
vertrieb@gefran.de

SIEI AREG - GERMANY
Gottlieb-Daimler Strasse 17/3
D-74385 - Pleidelsheim
Ph. +49 (0) 7144 897360
Fax +49 (0) 7144 8973697
info@sieiareg.de

GEFRAN SUISSE SA
Sandackerstrasse, 30
9245 Oberbüren
Ph. +41 71 9554020
Fax +41 71 9554024
office@gefran.ch

SENSORMATE AG
Steigweg 8,
CH-8355 Aadorf, Switzerland
Ph. +41(0)52-2421818
Fax +41(0)52-3661884
http://www.sensormate.ch

GEFRAN FRANCE SA
4, rue Jean Desparmet - BP 8237
69355 LYON Cedex 08
Ph. +33 (0) 478770300
Fax +33 (0) 478770320
commercial@gefran.fr

GEFRAN UK Ltd
Capital House, Hadley Park East
Telford
TF1 6QJ
Ph. +44 (0) 8452 604555
Fax +44 (0) 8452 604556
sales@gefran.co.uk

GEFRAN ESPAÑA
Calle Vic, números 109-111
08160 - MONTMELÓ
(BARCELONA)
Ph. +34 934982643
Fax +34 935721571
comercial.espana@gefran.es

GEFRAN MIDDLE EAST ELEKTRIK VE ELEKTRONIK San. ve Tic. Ltd. Sti
Yesilkoy Mah. Ataturk
Cad. No: 12/1 B1 Blok K:12
D: 389 Bakirkoy /Istanbul TURKIYE
Ph. +90212 465 91 21
Fax +90212 465 91 22

GEFRAN SOUTH AFRICA Pty Ltd.
Unit 10 North Precinet
West Building
Topaz Boulevard Montague Park,
7411, Cape Town
Ph. +27 21 5525985
Fax +27 21 5525912

GEFRAN SIEI
Drives Technology Co., Ltd
No. 1285, Beihe Road, Jiading
District, Shanghai, China 201807
Ph. +86 21 69169898
Fax +86 21 69169333
info@gefransiei.com.cn

GEFRAN SIEI
Electric Pte. Ltd.
No. 1285, Beihe Road, Jiading
District, Shanghai, China 201807
Ph. +86 21 69169898
Fax +86 21 69169333
info@gefransiei.com.cn

GEFRAN SIEI - ASIA
31 Ubi Road 1
#02-07, Aztech Building
Singapore 408694
Ph. +65 6 8418300
Fax +65 6 7428300
info@gefan.com.sg

GEFRAN INDIA
Survey No: 182/1 KH, Bhukum, Paud road,
Taluka – Mulshi,
Pune - 411 042. MH, INDIA
Phone No.:+91-20-39394400
Fax No.: +91-20-39394401
gefran.india@gefran.in

GEFRAN TAIWAN
No.141, Wenzhi Rd., Zhongli City,
Taoyuan County 32054,
Taiwan (R.O.C.)
Ph. +886-3-4273697
eddie.liao@gefransiei.com.sg

GEFRAN Inc.
8 Lowell Avenue
WINCHESTER - MA 01890
Toll Free 1-888-888-4474
Fax +1 (781) 7291468
info.us@gefran.com

GEFRAN BRASIL ELETROELETRÔNICA
Avenida Dr. Altino Arantes,
377 Vila Clementino
04042-032 SÂO PAULO - SP
Ph. +55 (0) 1155851133
Fax +55 (0) 1132974012
comercial@gefran.com.br

bsi. ISO 9001 Quality Management
FM 608910

CE

www.gefran.com