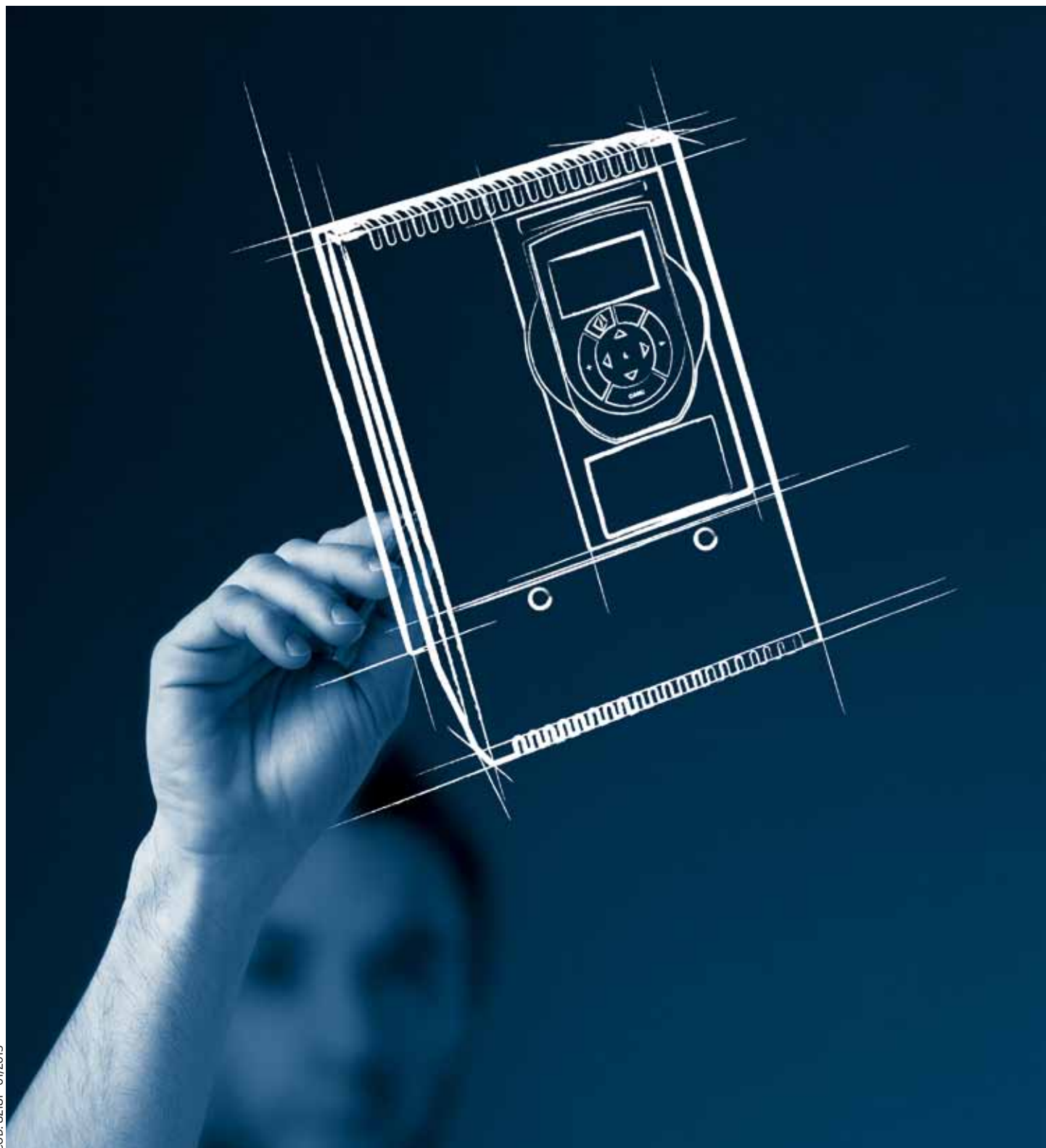


DC ARMATURE CONVERTERS

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

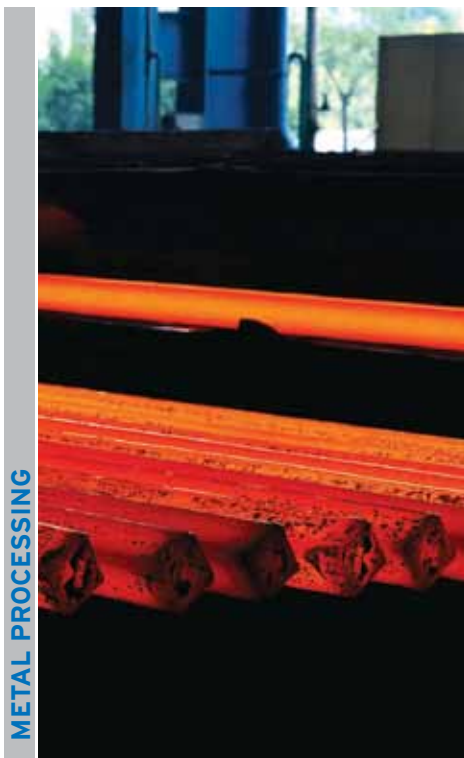
TPD32-EV DC drive series is a product of the ever growing technological demands of modern industrial systems, and draws on Gefran's years of experience in the field of DC motor speed control.

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



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.



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

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-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

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

230 VAC ... 500 VAC ±10%, 50/60Hz ±5%

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

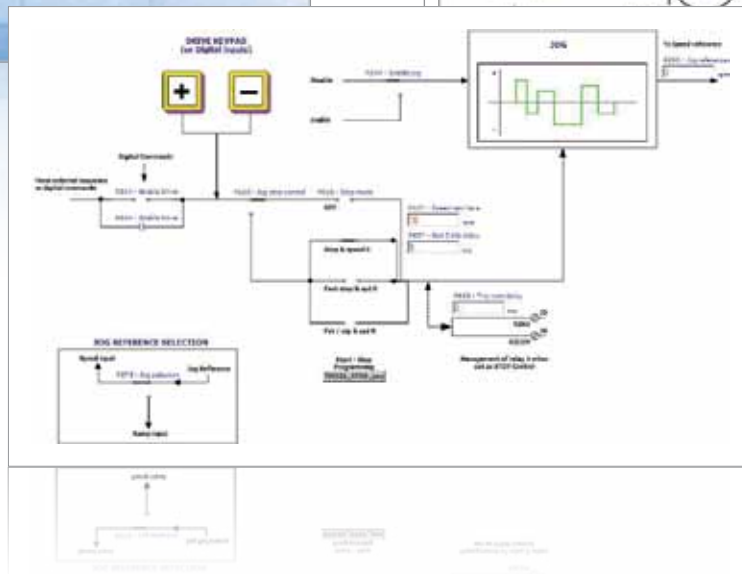
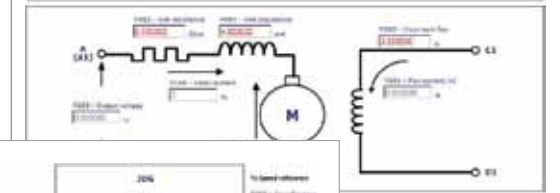
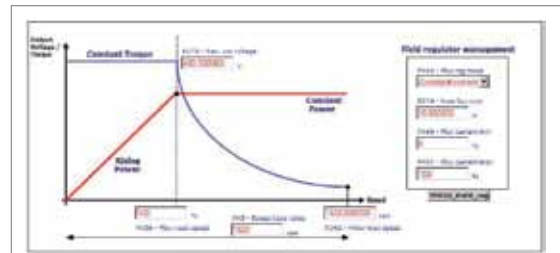
575 VAC ... 690 VAC ±10%, 50/60Hz ±5%

TPD32 EV-FC-200/...:

60 VAC ... 200 VAC ±10%, 50/60Hz ±5%

TPD32 EV-FC-500/...:

230 VAC ... 500 VAC ±10%, 50/60Hz ±5%



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).

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.

Overload
Programmable up to 200% with dedicated firmware function.



| | | |
|---|--|---|
| <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 Multispeeds; 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 | | | | | 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 | | | | | [Vac] | | [Vdc] | | [A] | | |
| | | | | | [Vac] | [Vac] | [Vac] | | | | | [Hz] | [A] | [A] | [A] | 2B | 4B | |
| 20 | 17 | • | • | A1 | • | | | 20 | 17 | Programmable I _{DN} up to 200% | 600 Vbc 520 Vbc 680 Vbc 600 Vbc 810 Vbc 720 Vbc | 230 V _{AC} ± 15% or 400 V _{AC} ± 15% or 460 V _{AC} ± 10%, single-phase, 50/60Hz ± 5% | Fissa o regolabile: 200 V _{DC} (for 230 V _{AC}) or 310 V _{DC} (for 400 V _{AC}) or 360 V _{DC} (for 460 V _{AC}) | 115 V _{AC} ± 15% or 230 V _{AC} ± 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}] | | | | | [A] |
| 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 | | | 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% | |
| 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} | | | | | 720 V _{DC} |
| 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.

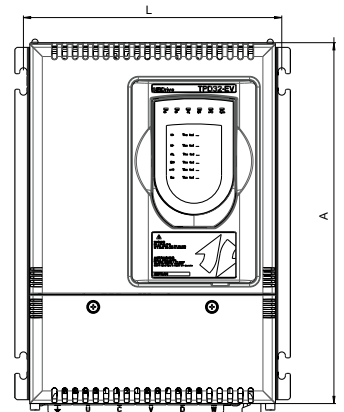
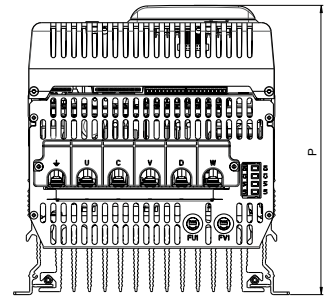
CONVERTER SELECTION - INPUT AND OUTPUT DATA

| 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] | |
| 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 | | | | |

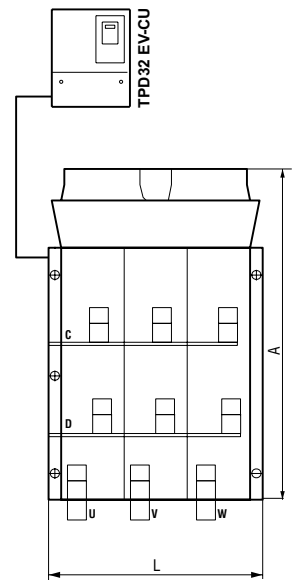
| TPD32 EV -CU - External bridge control unit | | | | | | | | | | | | |
|---|-------------------------|-------|--|--------------------|---|---|--|---|---|---|---|--------------------|
| TPD32-EV-CU Sizes | 2 quadrant / 4 quadrant | Frame | U _{LN} AC Input Voltage | AC Input Frequency | I _{DN} Rated 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}] |
| 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 | 720/810 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 |
| 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

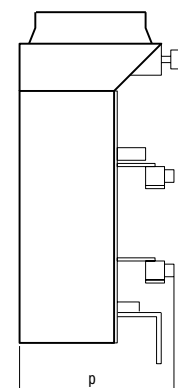
| TPD32 EV Standard sizes | TPD32 EV-...-NA American sizes | Frame | Dimensions: W x H x d - mm ["] | Weight kg [lbs] |
|-----------------------------|-----------------------------------|-------|---|--------------------|
| TPD32-EV-.../...-20-...-A | TPD32-EV-.../...-17-...-A-NA | A1 | 267 x 349 x 280 [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 | A2 | 267 x 349 x 280 [10.5 x 13.7 x 10] | 10.8 [23.8] |
| TPD32-EV-.../...-110-...-A | TPD32-EV-.../...-88-...-A-NA | | | |
| 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-.../...-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 | | | 72 [158.7] |
| 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] | 152 [335.1] (2B) |
| TPD32-EV-.../...-1050-...-C | TPD32-EV-500/...-800-...-C-NA | | | 203 [447.5] (4B) |
| TPD32-EV-.../...-1300-...-D | TPD32-EV-.../...-920-...-D-NA | | | 165 [363.8] (2B) |
| TPD32-EV-.../...-1300-...-D | TPD32-EV-575/...-980-...-D-NA | | | 215 [474.0] (4B) |
| TPD32-EV-.../...-1400-...-D | TPD32-EV-.../...-1000-...-D-NA | | | 191 [421.1] (2B) |
| TPD32-EV-.../...-1600-...-D | TPD32-EV-.../...-1200-...-D-NA | | | |
| TPD32-EV-.../...-1900-...-D | TPD32-EV-.../...-1450-...-D-NA | | | |
| TPD32-EV-.../...-2000-...-D | TPD32-EV-.../...-1500-...-D-NA | | | |
| TPD32-EV-.../...-2100-...-D | TPD32-EV-.../...-1650-...-D-NA | | | 241 [531.3] (4B) |
| TPD32-EV-.../...-2300-...-D | TPD32-EV-.../...-1800-...-D-NA | | | |
| TPD32-EV-.../...-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] |
| 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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