

- All modern pallet truck functionality as standard
- 200Arms and 250Arms traction power options
- Compatible with all AC induction motors
- EN ISO 13849 Category 3 hardware architecture
- Dual microprocessors
- Dual inputs
- B+Safe high-side supply
- 5V and 12V supplies
- CANopen comms
- 35-way AMPSEAL connector
- Sealed to IP65
- Designed to the requirements of EN ISO 13849, EN 1175-1 and UL 583
- CE marked as a safety component

The C3-CE from PG Drives Technology is the first in a new range of AC motor controllers designed specifically to the requirements of EN ISO 13849.

Featuring EN ISO 13849 Category 3 hardware architecture, including dual microprocessors, dual inputs and a dedicated B+Safe output, this extension to PGDT's high performing, compact and cost-effective C3 family will provide vehicle OEMs with one of the world's safest controllers for Class 3 trucks.

Two versions are available – 200Arms and 250Arms – providing the most economic and efficient solution for the application. The C3-CE is compatible with all types of AC induction motor.

The C3-CE features twelve dedicated digital inputs that can be individually switched to 0V, open-circuit, B+ or a combination of these options to provide the active state. Flexible, yet simple programming facilitates up to six dual paths for safety functions such as 'prevention of travel' and 'tiller control', both of which are listed in 'EN1175-1:1998+A1:2010 Safety of industrial trucks – Electrical requirements – Part 1: General requirements for battery powered trucks'. Single input, Category 2 architectures like those currently adopted by other controller suppliers, require the safety function to be checked at 'machine



start-up' and 'prior to the initiation of any hazardous situation'. For typical pallet trucks this is inconvenient and potentially dangerous. PGDT's Category 3 dual input design provides a safer and more convenient approach. The C3-CE also features a dual path analog input that accepts multiple types of throttle connections, including 2- or 3-wire resistive and voltage, for maximum safety and wiring simplicity.

Four 2A outputs and one 3A output allow control of line and lift contactors, a lower valve, plus an electro-magnetic brake. All outputs are protected against wiring errors and contain coil suppression circuits, meaning external diodes are not required. The C3-CE also incorporates an innovative B+Safe high-side coil supply that electrically isolates all of the low-side switches in the event of a hardware or safety function failure.

The innovative construction methods employed by the C3-CE ensure reliable and repeatable assembly of the electronic enclosure, which results in consistent protection of the electronic circuits from the environment and efficient transfer of heat to the baseplate. The design is compliant with all relevant international materials handling vehicle standards, e.g. EN 1175-1 (EN ISO 13849), UL 583 etc.

## SPECIFICATIONS

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### ELECTRICAL

|                                |   |
|--------------------------------|---|
| SUPPLY VOLTAGE                 | 16-30Vdc  |
| PEAK VOLTAGE                   | 35Vdc   |
| REVERSE BATTERY VOLTAGE        | 40Vdc   |
| PWM FREQUENCY                  | 10kHz   |
| CONTACTOR & VALVE OUTPUTS      | 4x 2A, protected                                    |
| SOLENOID BRAKE OUTPUT          | 3A, protected                                       |
| TRACTION MOTOR OUTPUT – 2 MINS | 200Arms (C3-CE-200)<br>250Arms (C3-CE-250)          |
| TRACTION MOTOR OUTPUT – 1 HR   | 80Arms min. (C3-CE-200)<br>100Arms min. (C3-CE-250) |

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### MECHANICAL

|                   |                |
|-------------------|----------------|
| POWER CONNECTIONS | M6             |
| CONTROL CONNECTOR | 35-way AMPSEAL |
| LENGTH            | 172mm / 6.77"  |
| WIDTH             | 146mm / 5.75"  |
| HEIGHT            | 64mm / 2.52"   |

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### ENVIRONMENTAL

|                       |                    |
|-----------------------|--------------------|
| INGRESS PROTECTION    | IP65               |
| OPERATING TEMPERATURE | -30°C to 55°C      |
| STORAGE TEMPERATURE   | -40°C to 70°C      |
| EMC                   | Tested to EN 12895 |

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## PRODUCT CODES

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### CONTROLLERS

|           |                        |
|-----------|------------------------|
| C3-CE-200 | 200Arms traction drive |
| C3-CE-250 | 250Arms traction drive |

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### DISPLAYS

|           |                          |
|-----------|--------------------------|
| iGAUGE    | 52mm diameter, LCD gauge |
| TRUCHARGE | 10 segment, LED gauge    |

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### PROGRAMMERS

|                 |   |
|-----------------|---|
| DTT             | Diagnostic Test Tool, hand-held programmer  |
| CAN PCP SERVICE | PC Programmer, service access               |
| CAN PCP OEM     | PC Programmer, OEM and manufacturing access |

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