

# **IMPULSE® G+** *Mini*

Adjustable Frequency Crane Controls

COMPACT AND  
COST-EFFECTIVE  
LOW HORSEPOWER  
**SOLUTION**



**MAGNETEK**  
MATERIAL HANDLING

**ELECTROMOTIVE SYSTEMS**





# IMPULSE®•G+ MINI ADJUSTABLE FREQUENCY CRANE CONTROLS

The IMPULSE•G+ Mini from Magnetek continues our history of providing the most reliable and cost-effective adjustable frequency crane controls available. The low horsepower (HP) IMPULSE•G+ Mini is our easiest to program drive to date, with user-friendly standard programming for basic applications and advanced programming capability for high performance environments. The IMPULSE•G+ Mini is designed with an expanded HP range and an identical dimensional footprint as the IMPULSE®•P3 Series 2 (up to 5HP) and a smaller footprint beyond 5HP.

All this, plus assured reliability and lower cost make the IMPULSE•G+ Mini Adjustable Frequency Crane Control the product of choice for your overhead material handling needs.

# EASY-TO-USE, RELIABLE PERFORMANCE FEATURES

## FACTORY DEFAULT SOFTWARE SETTINGS

The IMPULSE•G+ Mini is factory preset for basic application programming. This allows the technician to easily navigate and program the drive via a built-in keypad display in minutes for most applications.

## ADVANCED PROGRAMMING CAPABILITY

The IMPULSE•G+ Mini provides the choice of programming in Basic or Advanced access levels. In the Basic access level, the parameter availability (features) and navigation is nearly identical to the IMPULSE•P3 Series 2 in Basic mode. In the Advanced access level, the parameter availability and feature set is opened up to reveal the full capacity of the IMPULSE•G+ Mini drive. In this mode, the up and down arrow keys will navigate through the already familiar parameters of the IMPULSE•G+ Series 4 Crane Control.

**LOAD CHECK™ II** This built-in feature continuously detects hoist overload conditions throughout the frequency range, halting upward motion and only allowing the load to be lowered. It continuously monitors the hook load, both during acceleration and constant speed, eliminating the need for load cells in most applications. Its new auto-setup feature will define the hoist's maximum hook load in seconds. Load Check II detects overload conditions when loads are "snagged" during low speed operation. With these control advancements, the drive will pause lifting when the rated capacity is approached and will only allow the load to be lowered. These enhancements provide increased safety and productivity.

**COMPACT DESIGN** Our most compact low HP drive to date, the IMPULSE•G+ Mini's size permits the use of smaller control enclosures, reducing the overall cost of an installation. It also expands application opportunities on smaller cranes, hoists, trolleys, and monorail carriers. The IMPULSE•G+ Mini is available with standard 120VAC interface card, with 24VAC, 48VAC, and 24VDC optional.

**EXPANDED HP RANGE** Available in ½ through 20 HP in 380-480V or ¼ through 20HP in 200-240V three phase ratings. This allows the user to select the most cost-effective product for low HP applications through Class D service. Variable Frequency Drive (VFD) technology provides energy savings compared to traditional contactor technology.

**ENERGY ENGINEERED™** All of Magnetek's motion control products are designed to efficiently utilize available power, reducing energy costs for you and your customers.

**RELIABILITY BUILT IN** Designed with reliability and economy in mind! The hardware and software were designed and extensively tested specifically for the operating conditions seen in overhead material handling applications. The IMPULSE•G+ Mini is backed by our three-year warranty.

## OPTIONAL FLAT HEAT SINK DESIGN AVAILABLE

This option reduces the depth of the drive by as much as 45%. Finless capacities are available in 230-460V ½ through 5HP. Consult factory on the suitability of the flat heat sink design for your application.





# IMPULSE•G+ MINI CAPABILITIES

## BASIC CONTROL MODE FEATURES

### CAPABILITIES

CMAA CLASS A-D SERVICE

EXCLUSIVE CRANE & HOIST SOFTWARE

REMOVABLE TERMINAL BLOCK WITH  
PARAMETER BACKUP AND:

- (7) Multi-function digital inputs
- 120VAC standard (24VAC, 42-48VAC, and 24VDC optional)
- Europe: 24VDC standard compatible with 50Hz and 60Hz
- (1) Hardware BaseBlock
- (2) Multi-function analog inputs (0-10VDC, 4-20mA, 0-20mA)
- (1) Multi-function Pulse input
- (1) Multi-function Pulse output
- (1) Multi-function Relay output
- (2) Multi-function photo-coupler output (120V optional)
- (1) Multi-function analog output (0-10VDC)
- European models have (6) multi-function digital inputs

40:1 SPEED RANGE

- Three Speed Control Methods
  - Up to five distinct speeds
  - Infinitely Variable Control
  - Stepless Analog Speed Reference

RATINGS\*

- 380-480 VAC, ½ to 20HP
- 200-240 VAC, ¼ to 20HP

SAFETY

- Safe Operating Windows™ — reduces possibility of programming unsafe parameters
- Motor Thermal Overload Protection — reduces possibility of motor damage
- Quick Stop™ — reduces possibility of crane collision
- EN 61800-5-2, EN 61508, SIL2 Hardware Base Block Circuit
- Certifications: UL, cUL, RoHs, TÜV, CSA, CE (available with filters)
- UL recognized Electronic Thermal Overload

PERFORMANCE

- X-Press Programming™ — allows programming initial setup within seconds
- Swift-Lift™ — allows overspeeding with light loads or empty hook
- Reverse Plug Simulation™ — allows operator to smoothly and quickly stop and change directions without setting brake
- Auto-Tuning — non-rotational auto-tuning for performance demanding applications

\*For wiring diagrams, drive ratings, and dimensions, see Technical Bulletin #144-25092.



## ADVANCED CONTROL MODE FEATURES

The IMPULSE•G+ Mini advanced control mode offers you all our basic control mode features, plus, with a single parameter access level adjustment, it can be opened up to utilize all the advanced features and programming capabilities without reconfiguring.\*\*

### CAPABILITIES

#### 100:1 SPEED RANGE

- 200% starting torque at 0.5Hz
- Up to 16 discrete speed references
- Expanded programmable input/output capabilities
- Preferred Parameter feature
- Preventative maintenance function (IGBTs, Capacitors, FAN)
- Side-by-side installation for panel space savings
- Additional analog input available

#### PERFORMANCE

- Open-Loop Vector Control
- Micro-Positioning™ Control
- Ethernet/IP Communication optional
- Serial Communications — Modbus, RS-422/485 communication up to 115Kbps
- Load Check™ II
- Inching Control
- Auto-Tuning— rotational and non-rotational auto-tuning for performance demanding applications

\*\* For advanced control mode feature instructions, see IMPULSE•G+ Mini Advanced Instruction Manual #144-25085.



# IMPULSE•G+ MINI SOFTWARE FEATURES

|  | BASIC | ADVANCED |
|--|-------|----------|
| Additional Accel/Decel Times   |       | •        |
| Automatic Fault Reset  | •     | •        |
| Custom V/F Patterns  | •     | •        |
| SIL2 Safe Torque Off   | •     | •        |
| Fault History  |       | •        |
| Inching Control  |       | •        |
| Input/Output Phase Loss Detection  |       | •        |
| Jump Frequencies   |       | •        |
| Load Check™ II   |       | •        |
| Micro-Positioning™   |       | •        |
| Motor Auto-Tuning  | •     | •        |
| Motor Thermal Overload Protection  | •     | •        |
| Multiple Reference Sources   |       | •        |
| Multiple Run Sources   |       | •        |
| Non-Mechanical Load Brake Sequence (Qualified OEM Applications)                    |       | •        |
| Overheat Detection   |       | •        |
| Overload Counter   |       | •        |
| Overtorque/Undertorque Detection   | •     | •        |
| Password Protection  | •     | •        |
| Overspeed Detection by Pulse Feedback  |       | •        |
| Portable Copy Stick  | •     | •        |
| Programmable Cooling Fan Operation   |       | •        |
| Pulse Feedback   | •     | •        |
| Quick Stop™  | •     | •        |
| Reverse Plug Simulation™   | •     | •        |
| Runtime Counter  |       | •        |
| Safe Operating Windows™  | •     | •        |
| Save Current Parameter Settings  |       | •        |
| Slip Compensation  |       | •        |
| Stall Prevention   | •     | •        |
| Swift-Lift™  | •     | •        |
| Timers:<br>- On/Off Delay<br>- Run/Jog Delay<br>- Inching Control<br>- Maintenance |       | •        |
| Torque Compensation  |       | •        |
| Torque Limiting  |       | •        |
| User Selectable Parameter Access   |       | •        |
| X-Press Programming™   | •     | •        |

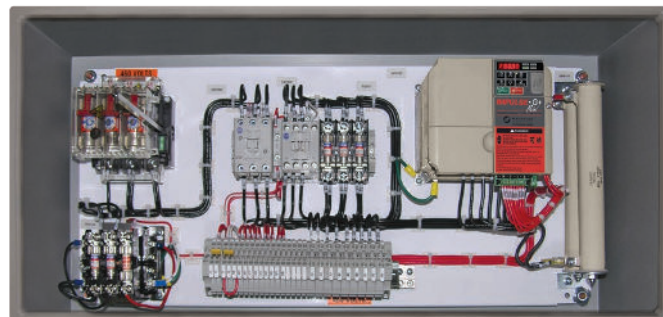


# COMPLETE IMPULSE® CONTROL PANELS AVAILABLE

## STANDARD FEATURES INCLUDE:

- 120 Volt control voltage interface card\*
- Brake contactor branch fusing
- Built-in electronic motor thermal overload protection
- Dynamic braking resistor(s)
- All wiring to a single terminal strip
- Clearly marked wires (at both ends)
- Complete wiring schematic
- NEMA 4/12 enclosure

\*24VDC, 24VAC, and 42-48 VAC optional



## KEYPAD/DIGITAL DISPLAY

### FEATURES:

- Standard LED five digit display of parameters and diagnostics
- Simplified navigation common to IMPULSE drives, so users don't have to relearn
- Easy set up and troubleshooting

### ALLOWS FOR:

- Programming both Basic and Advanced drive parameters
- Monitoring the functions of the drive
- Reading alpha-numeric fault diagnostic indications



## UNSURPASSED PRODUCT SUPPORT

As always, you can count on Magnetek and IMPULSE® drives to help you achieve the maximum performance and reliability of your overhead material handling system, including:

- Three-year warranty
- Magnetek Service Technicians on-call 24/7
- On-site and in-house product training programs
- Fully tested prior to shipment

For maximum control flexibility, match the IMPULSE•G+ Mini with Magnetek's Pendant Pushbutton Stations or our line of Wireless Crane Controls.

**FOR MORE INFORMATION, CONTACT  
MAGNETEK MATERIAL HANDLING OR YOUR  
LOCAL MAGNETEK SALES REPRESENTATIVE.**







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