

MagnePulse™ DMC Series 2 FAQ

Digital Magnet Control Frequently Asked Questions

Introduction

Having immediate access to critical equipment and system information can help you increase the safety, productivity, and uptime of your facility. The Magnetek® brand MagnePulse DMC Series 2 Digital Magnet Control provides you with easily accessible system monitoring and diagnostic information – anytime, anywhere. Combining advanced safety and performance features in one easy-to-use control, MagnePulse offers comprehensive system monitoring that can be used on processes and equipment for optimal efficiency. The latest in DC-to-DC control, MagnePulse DMC Series 2 is ideal for operation of industrial lifting magnets in heavy-duty applications.

General Product Questions

1. What information is required to quote a MagnePulse DMC Series 2 control package?

- Magnet cold current rating
- Magnet voltage
- DC line voltage
- Maximum ambient temperature
- Desired enclosure type

If the operator control switch is not a standard lift-drop switch, please specify the desired control method. Some control methods may take advantage of the drive's programming features, including: cast, dribble, OmniBeam™, analog control, etc. If pilot devices are controlled by the magnet controller, please specify their voltage and current requirements.

2. Where will you see return-on-investment (ROI) when upgrading from traditional contactor technology to the MagnePulse DMC Series 2?

When compared to standard contactor control the end user will find:

- **Increased Production Throughput**
 - DMC lowers cycle times by decreasing lift and clean times. These features are configurable for almost any magnet application using the DMC. The DMC regulates current, not voltage, which minimizes the variation in control performance found in contactor control, which typically regulates voltage.
- **Reduced Energy Costs**
 - Reductions from approximately 20-60% can be realized utilizing the hold, auto clean, and timed clean features, making each cycle easier to repeat.
 - Minimizing the magnet's duty cycle reduces the magnet's temperature, which means the magnet can operate at its maximum lifting force. This guarantees the magnet is moving the most load per cycle.
- **Replacement Costs**
 - DMC utilizes only one contactor, which is not switched under load, nearly eliminating electrical wear. Typical reversing magnet controllers utilize four contactors, each of which is switched under load and typically arcs across the tips.
 - Because the DMC minimizes the magnet's temperature and voltage spikes, the magnet wear is decreased, reducing the frequency of costly magnet repairs.

3. Will the MagnePulse DMC Series 2 work with existing operator controls?

Yes, we have designed the control firmware to work with lift, lift-drop, stepped, and analog operator controls. Additional programmable features have been added to supplement a crane's current functionality, such as decreased lift, cast, temperature alarm, and external fault.

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4. Can the MagnePulse DMC Series 2 operate on the same bus as contactor magnet controls?

Yes, as long as the DC bus maintains a voltage within the limits specified in the technical manual.

5. Why is it important to consider the rectifier type when applying the MagnePulse DMC Series 2?

The reason for concern on the type of supply voltage feeding the crane is due to the potential of compatibility issues, which could affect the overall package cost.

- Voltage-regulated SCR supply can induce voltage transients. Therefore, we may apply DC line chock to avoid overvoltage nuisance faults.
- AC ripple can cause problems because the capacitor allows AC current to pass through.
 - AC ripple should be measured, if possible (more often a problem with voltage-regulated SCR supply) and may require DC line choke.
 - AC voltage ripple will increase the DC bus voltage and possibly cause overvoltage faults.
 - AC current ripple will increase the RMS current flowing in the circuit.

6. How are the MagnePulse DMC Series 2 controls sized?

For single magnets, the magnet's cold current rating should be used to size the DMC's current class. The control's current rating must exceed the magnet's cold current rating.

If the magnet's cold current rating is below 20 Amps DC, an external CT board should be included. If ground fault detection will be enabled, a second external CT board is required for proper fault detection. Contact the Columbus McKinnon Magnetek facility in Menomonee Falls, WI, at 800.288.8178 for applications with DC line voltages exceeding 320 VDC.

7. What support is available for the MagnePulse DMC Series 2?

Columbus McKinnon will provide the same support that is available for all control and power delivery products and automation systems.

- Over-the-phone technical support, available 24/7/365 from our Menomonee Falls facility at 800.288.8178
- Two-year warranty
- Fast turnaround on repaired products
- Manual and product documentation available on www.magnetek.com
- Product instruction and troubleshooting available via an in-house training course at our Menomonee Falls, WI, facility or on-site at your facility

8. Will there be any future product enhancements?

Yes, Ethernet communications for the MagnePulse DMC Series 2 will be available in late 2020.