

# 搖晃控制系統 系列2

## IMPULSE® SWAY CONTROL SYSTEM SERIES 2

### 改造安裝 Retrofit Installations

#### 使用MAGNETEK IMPULSE 搖擺控制系統加強天車操作

#### ENHANCE CRANE OPERATION WITH MAGNETEK'S IMPULSE® SWAY CONTROL SYSTEM

Magnetek IMPULSE 搖擺控制系統(SCS)系列2訂製軟體能加到任何品牌現有車和小車上可變速度的變頻器。外部改造系統提供了現有天車安裝上搖擺控制系統的優點。

Magnetek IMPULSE Sway Control System(SCS) Series 2 custom software can be added to any brand of existing bridge or trolley variable speed drives. This external retrofit system provides the benefit of sway control on an existing crane installation.

#### 增加安全性和性能 IMPROVED SAFETY AND PERFORMANCE

- 藉著允許天車控制者在全速時移動荷重物而且停止時勿需等待荷重搖擺的損失而改進產能。  
Improves productivity by allowing the crane operator to move loads at full speed and come to a stop without needing to wait for load sway to dampen.
- 改進荷重位移的精度。  
Improves the accuracy of load placement.
- 藉著減少潛在個人傷害和設備損害而造成搖擺荷重物碰觸加強操作安全性。  
Enhances operational safety by reducing the potential for personnel injuries and damaged equipment caused by accidental contact with swinging loads.
- 藉著減少結構、機械和控制零件的應力減少維修成本。  
Reduces maintenance costs and downtime by decreasing stresses on structural, mechanical, and control components.
- 減少學習如何處理搖擺荷重所需訓練的時間。  
Decreases the training time required to learn how to handle a swinging load.

#### 可撓特性-容易使用 FLEXIBLE FEATURES MAKE IT EASY TO USE

- 可以使用單一或雙重移動的搖擺控制系統。  
Available in single or dual motion sway control systems
- 使用現有10VAG主開關輸入-24VDC, 24VAC和48VAC輸入為選用(下單時必須先規定)。  
Use existing 120VAC master switch sway control systems  
-24VDC, 24VAC, and 48VAC inputs optional (must be specified at time of order)
- 模擬或數位鉤頭高度的回饋輸入附在鉤頭配件之調整。  
Analog or digital hook height feedback input with hook attachment adjustments.
- 模擬或脈衝訓練搖擺控制頻率參考。  
Analog or pulse train sway control frequency reference.
- 兼容各種變頻器。  
Compatible with almost any variable speed drive.
- 減少85-95%的搖擺 Reduce sway by 85-95%
- Magnetek 材料處理天車功能的好處  
Take advantage of Magnetek Material Handling crane functions  
-逆插座式模擬 Reverse Plug Simulation    -微速 Micro-Speed  
-快速停止 Quick Stop                            -吋進 Inching
- 在無線傳輸或押扣控制可使用或不使用搖擺控制  
Enable or disable Sway Control at the radio transmitter or pendant station



#### 最低需求 MINIMUM REQUIREMENTS

- 能和2至5種多段速度相容或類比給定操考值  
compatible with 2 to 5 speed multi-step or analog speed reference
- 可變速變頻器必須有一個0-10V, +10/-10V, 或脈衝串0-32 kHz的類比輸入, 可以鍵入程式作為速度參考  
Variable speed drive must have a 0-10V, +10/-10V, or pulse train 0-32 kHz analog input that can be programmed as a speed reference
- 能調整加速、減速和S-曲線的時間到零的能力 (或接近零)  
Ability to adjust acceleration, deceleration, and S-curve times to zero (or near zero)

#### 規範 SPECIFICATIONS

電力要求 Power Requirements	可以有230VAC, 460VAC和575VAC型 230VAC, 460VAC, or 575VAC models available
數位輸入 Digital Inputs	每個移動有6種多功能120VAC輸入 Six multi-function 120VAC inputs per motion
繼電器輸出 Relay Outputs	3個多功能120VAC-A型輸出和1個120VAC-C型錯誤輸出。2個是典型使用作為方向輸出。 Three multi-function 120VAC form A outputs and one 120VAC form C fault output. Two are typically used as directional outputs
可變鉤頭高度反饋 Variable Hook Height Feedback	2個0-10VDC類比輸入(主或副吊車)或數位輸入能被使用來改進搖晃減少和天車的性能。 Two 0-10VDC analog inputs(Main or Aux Hoist) or digital inputs can be used to improve sway reduction and crane performance
外箱 Enclosure	NEMA 4/12 附螺旋舌片 NEMA 4/12 with screw latches
操作介面 Operator Interface	10個按鈕鍵盤附LCD顯示, 裝有密封的門 10-button keypad with LCD display mounted on the enclosure door
工作環境溫度 Ambient Operating Temperature	-10°到60°C (14°到140°F) -10° to 60°C (14° to 140°F)

#### 使用方塊圖例 EXAMPLE APPLICATION BLOCK DIAGRAM





## 搖晃控制系統 系列2 SWAY CONTROL SYSTEM (SCS®) SERIES 2

### 使用 MAGNETEK 搖晃控制系統加強起重機操作 ENHANCE CRANE OPERATION WITH MAGNETEK'S SWAY CONTROL SYSTEM

一路領先的創新產品的開發，MAGNETEK非常高興能夠提供我們的搖晃控制系統（SCS）系列2架空物料搬運行業。這訂製軟件是嵌入在我們的IMPULSE.G+系列4新的或現有的起重機控制變頻驅動器，而不需要外部編程邏輯系統控制器或昂貴的高度測量裝置。

Leading the way in innovative product development, Magnetek is excited to offer our Sway Control System(SCS)Series 2 to the overhead material handling industry. This custom software is embedded in our IMPULSE · G+ Series 4 variable frequency drives for new or existing crane control systems without the need for external programmable logic controllers or costly height measurement devices.

### SCS系列2優點 SCS SERIES 2 BENEFITS:

- 允許起重機操作員專注於負載接合/分離，而不是專注於減少的負載搖晃，進而提高了生產效率。該系統也提高了負載放置位置的精度。 Improves productivity by allowing the crane operator to concentrate on load engagement/disengagement rather than focusing on minimizing load swing. This system also improves the accuracy of load placement
- 減少負載擺動附帶的接觸所造成的材料損害。  
Reduces material damage caused by incidental contact of swinging load.
- 增強操作時的安全和降低潛在的人員傷亡和設備損壞。  
Enhances safety in operations and reduces the potential for personnel injuries and damage to equipment.
- 降低維護成本和藉著降低結構、機械、控制元件應力而減少停機時間。  
Reduces maintenance costs and downtime by decreasing stresses on structural, mechanical, and control components.

#### 系統限制 System Limitations:

- 100英尺起重機高度(向工廠諮詢起重機超過 1 0 0 英尺)  
100ft. hoist height (consult factory for greater than 100ft. of lift)
- 起用/停用SCS功能前必須先停止移動。  
Motion must be stopped prior to enabling/ disabling SCS function.

### SCS系列2被設計在 SCS SERIES 2 HAS BEEN DESIGNED TO:

- 只需要一個脈衝變頻驅動器（VFD），每個行程移動與SCS軟件。額外脈衝變頻驅動連接在主/副位置。  
Require only one IMPULSE Variable Frequency Drive (VFD) per traverse motion with SCS software. Additional IMPULSE VFDs are connected in a Master/Slave position.
- 操作V / F，開式迴路向量和磁通迴路向量的控制方法。  
Operate in V/F, Open Loop Vector and Flux Vector\* control methods.
- 兼容現有的主開關和無線電控制的配置，如 Multi-step 和無限 Variable Uni-polar/Bi-polar模擬。  
Be compatible with existing master switch and radio control configurations such as Multi-step and infinitely Variable Uni-polar/Bi-polar analog.
- 消除需要外部編程邏輯控制器。  
Eliminate the need for an external programmable logic controller.
- 接受吊鉤高度測量相結合時隨著一個 IMPULSE.VG+系列4起重機驅動。  
Accept a hook height measurement when combined with an IMPULSE · VG+ Series 4 hoist drive.
- 消除需要高昂的維護反饋設備如絕對編碼器。該系統也可以配置在運轉中吊鉤高度區。  
Eliminate the need for a high maintenance feedback device such as an absolute encoder. The system can also be configured to operate in an operating hook height zone.
- 與多個起重機在同一大車上。  
Work with multiple hoists on the same bridge.

### 性能特點包括 PERFORMANCE FEATURES INCLUDE:

- 選擇輸入用來微調鐘擺長度，當使用多個鉤頭以下配件或不同的負載大小。 Optional inputs available to fine tune the pendulum length when using multiple below the hook attachments or varying load sizes.
- 自動測量吊鉤高度當結合一個IMPULSE.VG+系列4起重機時。  
Automatic hook height measurement when combined with an IMPULSE VG+ Series 4 hoist.
- 無縫集成，具有特殊功能的IMPULSE變頻驅動器，如微速度和反向的插頭仿真，行程末端減速，停止限制。  
Seamless integration with special functions within IMPULSE variable frequency drives such as Micro-Speed and Reverse Plug Simulation, end of travel slow down, and stop limits.
- 啟用或停用一個開關翻轉。 Enabling or disabling with the flip of a switch.

## 相關產品 RELATED PRODUCTS

### 工程系統和解決方案 ENGINEERED SYSTEMS & SOLUTIONS

Project Evaluation  
Project Management  
Engineering Design  
System Manufacturing and Testing  
Field Startup, Testing, Training and Support  
Customer Training and Maintenance Support  
Application Solutions  
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### 脈衝交流電頻率可調的驅動器 IMPULSE® AC ADJUSTABLE FREQUENCY DRIVES

230, 460 and 575V Power Platforms  
.25-1,500HP  
Exclusive Application Software  
Specific Crane & Hoist Software

### OMNIPULSE 數位驅動器 OMNIPULSE™ DIGITAL DRIVES

DSD-AC in/DC out  
15-800HP  
DDC-DC in/DC out  
5-500HP  
MagnePulse™ Digital Magnet Control

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Single & 2 Speed-up to 15.2A  
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Standard Pre-Engineered Systems  
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### 電機及配件 MOTORS & ACCESSORIES

Standard Inverter Duty AC Induction Motors  
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### 電力傳輸系統 POWER DELIVERY SYSTEMS

ELECTROBAR ELITE-20, 60, 100, 130, 200A  
FABA® Conductor Bar Systems-100A  
ELECTROBAR HX-400, 700, 1000A  
ELECTROBAR FS-90, 110, 125, 250, 400A  
ELECTROBAR® 8-Bar-90, 110, 250, 350A

### 電纜懸吊系統 ELECTROMOTIVE™ FESTOONING SYSTEMS

Flat Festoon & Round Pendant Cable  
C-Track Festoon  
Heavy Duty I-Beam Festoon  
Mill Duty I-Beam Festoon  
Heavy Duty Aluminum Festoon  
Marine Terminal I-Beam Festoon  
Plug & Play Festoon Components

### 懸吊押扣開關 SBI® & SBP2® PENDANT PUSHBUTTON STATIONS

Standard 2- through 12-Button Stations  
Custom Configured Stations

### 無線遙控系統 ENRANGE™ AND TELEMOTIVE RADIO REMOTE CONTROL SYSTEMS

Flex VUE™  
Flex EX  
Flex Pro™  
telePendant™  
300T  
Pendant™  
telePilot™  
100T  
PGT  
DTX  
MLTX™  
MLTX2™  
XLTX  
SLTX™  
700T  
JLTX™  
Locomotive Control Systems

### 避免碰撞系統 COLLISION AVOIDANCE SYSTEMS

LaserGuard™  
ReFlx™  
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### 剎車 BRAKES

#### 200S INDUSTRIAL SHOE BRAKES

4"-19" Diameter  
9-2,250 Lb. ft. Torque  
AC, DC, Hydraulic Actuators  
AC Explosion Proof Actuators

#### AIST-NEMA 300M MILL DUTY SHOE BRAKES

5"-30" Diameter  
10-11,000 Lb. ft. Torque  
AC, DC, Hydraulic Actuators  
AC Explosion Proof Actuators

#### 400D HEAVY DUTY DISC BRAKES

8"-50" Diameter  
50-30,000 Lb. ft. Torque  
AC, DC, Hydraulic Actuators  
AC Explosion Proof Actuators

#### BRACKETRONIC™ CONTROL SYSTEM

Bracketronic Controller  
Standard Pre-engineered Panel  
Mill Duty Foot Pedal (optional)