CONTROL CHIEF®

3 SPEED HANDHELD TRANSMITTER

Owner's Manual

COMPLETE FOR FUTURE REFERENCE

CUSTOMER AND CONTACT:	_____
SYSTEM SERIAL NUMBER:	_____
OPERATING FREQUENCY:	

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Chapter 1

GENERAL INFORMATION

Scope

The purpose of this document is to provide the user with the information required to operate and maintain the 3 Speed Handheld Transmitter.

Reference Documentation

This 3 Speed Handheld Transmitter Owner's Manual is part of an Application Documentation Package, which is specifically designed for your system. Please read the entire package prior to installing or operating your COMMAND CHIEF™ or MDR8400 Series remote control.

The Application Manual is specific to the COMMAND CHIEF™ and MDR8400 series only. The sections of the Application Manual include, but are not limited to, the following:

- **Document Listing:** a checklist of documents specific to your system, included in the manual package.
- **Application Configuration:** a summary of your system listing the transmitter, receiver, and accessories.
- Owners Manual
- Transmitter Owner's Manual (This document)
- Allen-Bradley Publications
- Modular Component Installation Manuals. (Included with COMMAND CHIEF™ systems only.)
- Final System Prints: including transmitter layout and wiring drawings. (Refer to document listing for specific numbers.)
- Notes

System Description

A remote control system consists of a hand held transmitter and a crane mounted control package. The 3 Speed Handheld Transmitter is utilized with both of Control Chief's crane mounted remote control systems: MDR8400 series and COMMAND CHIEF™.

Peripheral support equipment includes battery charger, rechargeable batteries, surge suppressors and transmitter carrying harness or holster.

Transmitter

Implementing a Remote Controlled Crane in an industrial environment requires equipment that is durable, reliable, comfortable for the operator, and adaptable to a broad range of applications. The Control Chief 3 Speed Handheld Transmitter fulfills all of the above.

The following sections of this manual describe the features of the transmitter, installation considerations, operation, and maintenance.

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Chapter 2

TRANSMITTER SPECIFICATION

This section provides the technical specifications of the 3 Speed Handheld Transmitter.

Frequency	Standard Band: 450 – 470 MHz; Contact the factory for availability of other frequencies
Operating Range	1000 feet (305 meters) typical
Temperature Range	-20 to +140°F (-29 to +60°C)
Battery Life	8-hours typical (continuous operation)
Environmental Conditioning	Transmitter sealed against dust
Transmitter Diagnostics	LED indicators and built in self-diagnostics
Communication Security	each transmitter assigned an operating frequency and address specific to the crane system it is to control.
Frequency Stability	±2ppm
RF output power	10 mW (into 50-ohm impedance)

Due to a continuing development program, these specifications are subject to change without notice.

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Chapter 3

INSTALLATION

Introduction

Your 3 Speed Handheld Transmitter is ready to be placed into service once received with your system.

(If your transmitter has been customized for your particular application, please refer to the Configuration Cover Sheet and System Print package for additional details.)

Typically, the only Transmitter installation concern is the placement of the battery charger. Additionally, the supervisor should establish procedures for the operators and maintenance personnel to secure transmitters to prevent unauthorized use.

Battery Charger Placement:

Battery Chargers should be installed indoors, where access to 120Vac power is available, and the temperature does not exceed 75°F (24°C). If the charger is placed in an area with exposure to higher temperatures while charging, the daily life expectancy of the battery packs will be degraded.

Securing the Transmitter:

Suggested safety regulations require machine controls to be secured to prevent operation by unauthorized personnel. The 3 Speed Handheld Transmitter uses a keylock power switch. Only authorized personnel should be given access to the transmitter. When not in use, remove the transmitter Power Key or secure the transmitter in a locked cabinet.

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Chapter 4

TRANSMITTER OVERVIEW

Introduction

The objective of this section is to present a general overview of the transmitter.

The 3 Speed Handheld Transmitter is specifically designed to meet the demanding Crane Service Classification E – Severe Duty Service. This service class essentially requires continuous operation, and therefore subjects the transmitter to the probability of abuse due to the nature of some environments.

To meet this Crane Service class the transmitter is designed with the following features.

Mechanical Features

The unit is housed in a durable custom ABS housing. This type of material is ideal because of its light weight and durability.

Contamination entering the transmitter enclosure is minimized by the sealed design. This also provides a measure of protection from water spray.

Security Features

Power On/Off Keylock switch: Secures the unit for operation by authorized personnel. The key is removable in the OFF position.

Main Pushbutton: Controls the Main Line Contactor. This switch also functions as a Start/Warning.

Emergency Stop: Designed to provide a means of quickly stopping and securing the crane in an emergency.

Motion and Auxiliary Switch Features

3 Detent Pushbuttons: These buttons are custom designed for the 3 Speed Handheld to provide a variety of operational modes.

Other Features

LED Indicators: provide the operator with real time transmitter status including multi-level battery condition.

ON/ACTIVE indicator (green)
Transmitter ready – on constant
Transmitter active – fast blink

BAT LOW/DEAD (red)
Battery Low – blinking
Battery Dead – on constant (ERROR blinking)

ERROR (red)
To Be Defined

STATUS (blue)
E_STOP commanded – blinking

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Chapter 5

OPERATOR INSTRUCTION

Introduction

The operation of a COMMAND CHIEF™ or MDR8400 system requires trained and qualified personnel. Operating personnel should be familiar with basic crane handling, including safety regulations, and production tasks before attempting to operate a remote controlled crane.

The remote control system is designed to provide the operator with an operational advantage resulting in improved safety and production efficiency.

Transmitter Operation

Transmitters are secured with a keylock power On/Off Key Switch. The key can be removed in the OFF position to prevent unauthorized use.

To operate the Crane, the following steps are to be followed:

(For Universal Transmitter operation please refer to the Universal Transmitter section on page 6.)

1. Turn Keylock power switch to "ON".

2. Pull out the E-STOP button. If the E-STOP button is already pulled out when the keyswitch is turned on and the transmitter does not power up, cycle the E-STOP in and then back out again.

3. Wait momentarily while the transmitter performs a self diagnostic. The LED indicators will illuminate sequentially then the 3 Speed Handheld will indicate it is ready by illuminating the green indicator.

4. Press the Warning/Start/Reset button. Pressing this switch will engage the Main Line Contactor. Once the Main Line contactor is activated, the crane is ready for motion and auxiliary commands. The green active LED should now be flashing.

Further actuation of the Warning/Start push button will activate any warning devices, which may be utilized on the crane.

If the crane is not responding to transmitter commands refer to TROUBLESHOOTING and MAINTENANCE on page 8.

Emergency Shutdown

The 3 Speed Handheld transmitter is designed to provide intuitive methods to accommodate an operator reaction in an emergency situation.

- Pushing in the E-Stop button will disengage the Main Line contactor thus removing power to the crane motor circuits.
- Hands Off - Crane motions are disengaged when the operator releases the motion buttons. This does not disengage any auxiliary commands that are latched ON.
- Turn OFF the Transmitter. The operator turns off the transmitter's power by turning the Power switch to OFF or removing the batteries. A loss of RF signal from the transmitter will cause the receiver to disengage the main line contactor.

Preventive Maintenance

To conserve battery power, turn the Power On/Off key switch to OFF. This is especially important if the operator's task