



# *User's Manual*

## *MFSHL915 Handheld Transmitter*

## 1. DESCRIPTION

The MFSHL-915 Handheld Transmitter has a coder board with 24 digital channel inputs. Four of the inputs can be used for a gray code trigger. It includes a Low Voltage Indicator (LVI) warning, 1% duty cycle, and 2 seconds turn off time. It also includes switch detection on power up to ensure that no switch is active when the battery is inserted. The RF section uses FM-RF with 915MHz frequency and 76800 baud rate.

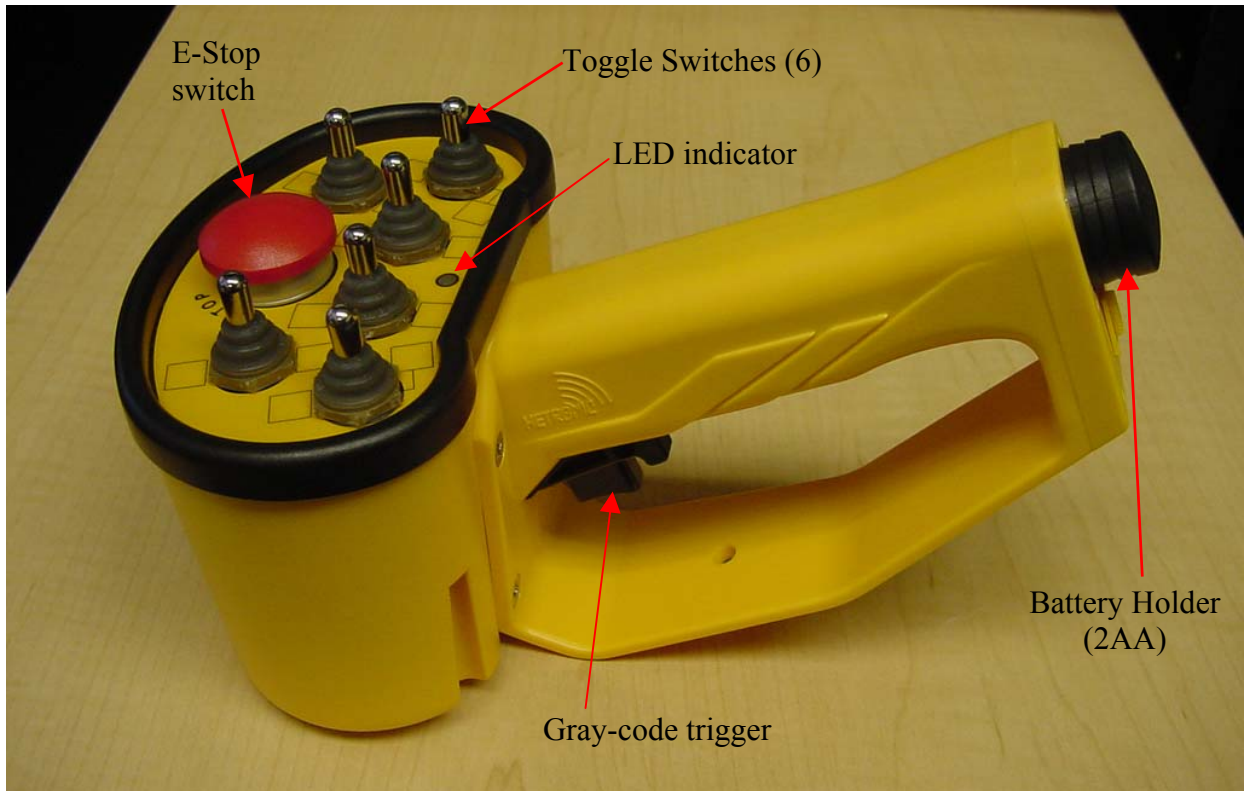
***Note: Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference that may cause undesired operation of the device.***

## 2. TECHNICAL SPECIFICATIONS

Temperature Range	-20° to +70° Celsius
Supply Voltage Range	2-5 VDC
Supply Current	42mA max 28mA for 5 seconds on startup
Outputs	RF-Data 2 LED
Inputs	24 digital
RF Specifications	
Frequency	915.0 MHz
Modulation	FM-Binary FSK
Deviation	64KHz
Output Power	5dBm

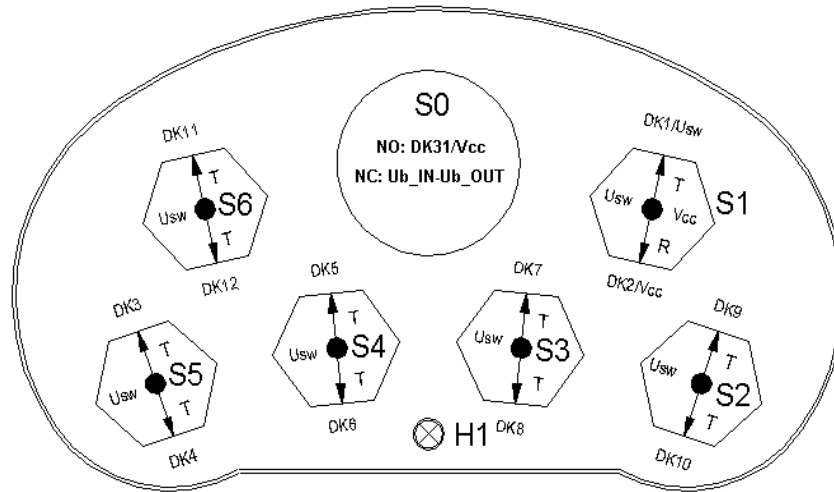
***Note: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.***

### 3. TRANSMITTER PARTS



## 4. FUNCTIONAL DESCRIPTION

### 4.1. General Description



- This transmitter is designed to transmit with RF-transmission duty cycle of 1%.
- The transmitter will turn off automatically 2 seconds after all switches are released.
- DK31/32 (ESTOP) is an emergency stop button that has priority above all other inputs.
- DK1 is a start function. This button can be used to reset error in the receiver (Overload/ Main Contact error).
- DK3-18 are regular digital channels.
- DK19-22 can be used as a 4-bit grey code trigger or regular digital channels.

### 4.2. Switch Error Detect

The unit contains a switch detection that detects when a switch is broken. If a switch is active when a battery is inserted the unit will go into an error state. The RED LED will come on and stay on until the active switch is turned off.

### 4.3. Low Voltage Indicator

The unit has a low battery detection function. Once the battery level becomes low the RED LED will come on solid while the GREEN LED keeps blinking with every telegram. If the voltage level reaches a critical level, the transmitter will only send ESTOP telegrams.

### 4.4. LED Description

Yellow Flashing: Unit is Operating

Yellow Flashing/Red Flashing/Green Flashing: Memory Error

Red Solid (on power up): Switch Error

(Note: Yellow LED is not visible unless the unit is opened)

#### 4.4.1. Transmit Mode

Green Flashing: Telegram Transmitted

Red ON, Green Flashing: Low Voltage Pre Warning

Red Flashing: E-stop Transmission