IR Programmer

Instruction Manual

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2 Preface and Safety

2.1 Product Safety Information

Magnetek, Inc. (Magnetek) offers a broad range of radio remote control products, control products and adjustable frequency drives, industrial braking systems, and power delivery products for material handling applications. This manual has been prepared by Magnetek to provide information and recommendations for the installation, use, operation and service of Magnetek's material handling products and systems (Magnetek Products). Anyone who uses, operates, maintains, services, installs or owns Magnetek Products should know, understand and follow the instructions and safety recommendations in this manual for Magnetek Products.

The recommendations in this manual do not take precedence over any of the following requirements relating to cranes, hoists, lifting devices or other equipment which use or include Magnetek Products:

- Instructions, manuals, and safety warnings of the manufacturers of the equipment where the Magnetek Products are used,

- Plant safety rules and procedures of the employers and the owners of the facilities where the Magnetek Products are being used,

- Regulations issued by the Occupational Health and Safety Administration (OSHA),

- Applicable local, state, provincial, or federal codes, ordinances, standards and requirements, or

- Safety standards and practices for the industries in which Magnetek Products are used.

This manual does not include or address the specific instructions and safety warnings of these manufacturers or any of the other requirements listed above. It is the responsibility of the owners, users and operators of the Magnetek Products to know, understand and follow all of these requirements. It is the responsibility of the employer to make its employees aware of all of the above listed requirements and to make certain that all operators are properly trained. **No one should use Magnetek Products prior to becoming familiar with and being trained in these requirements and the instructions and safety recommendations for this manual.**

2.2 Product Warranty Information

Magnetek, hereafter referred to as Company, assumes no responsibility for improper programming of a device (such as a drive or radio) by untrained personnel. A device should only be programmed or installed by a trained technician who has read and understands the contents of the relevant manual(s). Improper programming/installation of a device can lead to unexpected, undesirable, or unsafe operation or performance of the device. This may result in damage to equipment or personal injury. Company shall not be liable for economic loss, property damage, or other consequential damages or physical injury sustained by the purchaser or by any third party as a result of such programming and/or installation. Company neither assumes nor authorizes any other person to assume for Company any other liability in connection with the sale or use of this product.

WARRANTY INFORMATION

FOR INFORMATION ON MAGNETEK'S PRODUCT WARRANTIES BY PRODUCT TYPE, PLEASE VISIT WWW.MAGNETEK.COM.

2.3 DANGER, WARNING, CAUTION, and NOTE Statements

Read and understand this manual before installing, operating, or servicing this product. Install the product according to this manual and local codes.

The following conventions indicate safety messages in this manual. Failure to heed these messages could cause fatal injury or damage products and related equipment and systems.

⚠ **DANGER**

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠ **WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

> **NOTE:** A NOTE statement is used to notify people of installation, operation, programming, or maintenance information that is important, but not hazard-related.

3 External Illustrations
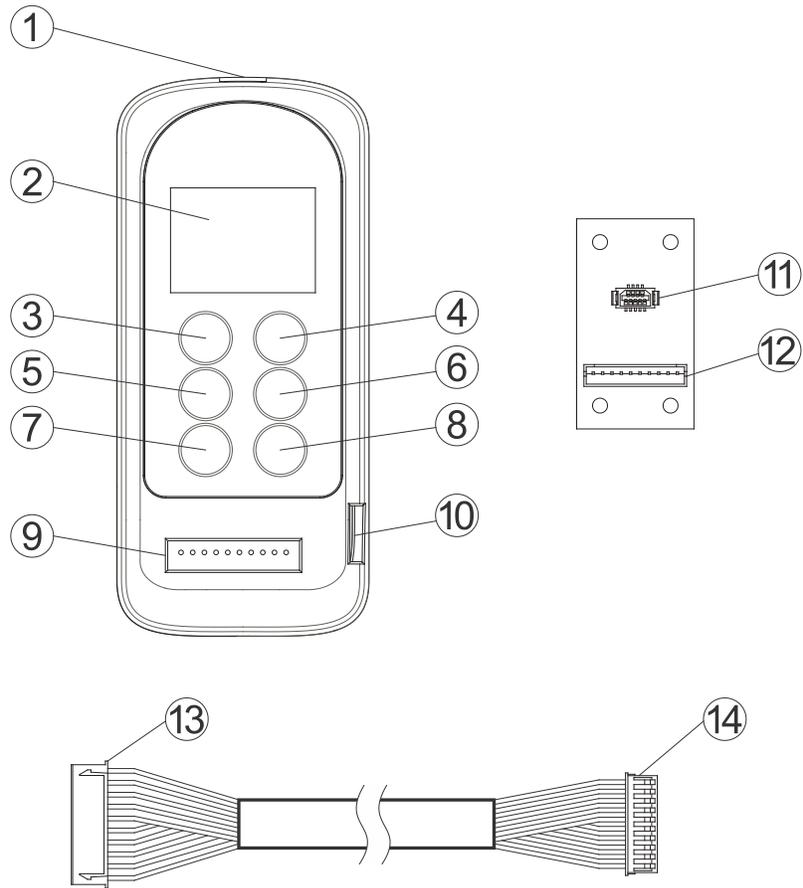
Fig. 1

1.	Infrared Sensors	8.	"Write" Button
2.	LCD Screen	9.	Programming Port
3.	"↑" Button	10.	Mini-USB Port (for firmware update)
4.	"↓" Button	11.	I-CHIP Port
5.	"BACK" Button	12.	I-CHIP Programming Board Connector
6.	"→" Button	13.	Connector to Programming Port
7.	"READ" Button	14.	Connector to I-CHIP Programming Board

(TX & RX)	→	Programming for both transmitter and receiver
(TX)	→	Programming for transmitter only
(RX)	→	Programming for receiver only

4 Power On/Off the Unit

Nothing is shown on the LCD screen when power is off.

Power off

Press the "→" button to power on the unit.

Power off		Power on
	Press "→" button	>FLEX-EX FLEX-Mini FLEX-ECO

Press the "Back" button at type model main screen to power off the unit.

Power on		Power off
>FLEX-EX FLEX-Mini FLEX-ECO	Press "Back" button	

The unit will power off after 10 minutes of inactivity.

Change the battery immediately when the LCD backlights flash repeatedly.

5 Model Selection

```
>FLEX-EX
 FLEX-Mini
 FLEX-ECO
```

At the type model main screen, use the "↑" and "↓" buttons to scroll between models. Press the "→" button to enter the selected type model (cursor shown next to the type model). To deselect the type model after entering, press the "BACK" button until the type model main screen is shown again. Press the "BACK" button again to turn off the programmer.

6 Flex EM/EX/Pro Models (Gen1)

6.1 Program I-CHIP

When entering the Flex EX model, the first selection shown on the screen is "Program I-CHIP." Use the "↑" and "↓" buttons to scroll through various Flex EX settings or press the "→" button to enter "Program I-CHIP." Make sure the I-CHIP is connected to the programmer.


```
>PROGRAM
 I-CHIP
  ERASE
```

1. Press the "→" button to erase I-CHIP information, and press the "→" button again to execute. "ERASE OK" is shown on the screen when completed.
2. Press the "READ" button to store the I-CHIP information into the programmer. When the screen displays "READ OK," the transfer is complete.
3. Press the "WRITE" button to transfer the stored I-CHIP information into a new I-CHIP. When the screen displays "WRITE OK," the transfer is complete.
4. Exit Program I-CHIP by pressing the "BACK" button until the cursor is shown next to "Program."
5. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.2 Program Serial Number (TX & RX)

1. Make sure the I-CHIP is connected to the programmer.
2. Press the "→" button to enter Serial Number setting.
3. Press the "↑" and "↓" buttons to change serial number as a whole, or
4. Press the "→" button to go to the 1st digit on the far left of the serial number.
5. Press the "↑" and "↓" buttons to change numeric value.
6. Press the "→" button to go to the next digit to the right and repeat step 5.
7. Press the "BACK" button to go back to step 3 or 4.
8. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "S/N."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

NOTE: When finished, remove the I-CHIP and insert it onto the I-CHIP programming port located on the decoder module to transfer the new serial number from the I-CHIP to the receiver. Make sure JP6 jumper is inserted when transferring I-CHIP information into the receiver.

6.3 Program System Type (TX & RX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter System Type setting.

3. Press the "↑" and "↓" buttons to change system type as a whole, or

4. Press the "→" button to go to the digit on the left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program System Type by pressing the "BACK" button until the cursor is shown next to "TYPE."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

NOTE: When finished, remove the I-CHIP and insert it into the I-CHIP programming port located on the decoder module to transfer the new system type from the I-CHIP to the receiver. Make sure JP6 jumper is inserted when transferring I-CHIP information into the receiver.

6.4 System Frequency Range (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter System Frequency Range setting.

3. Press the "↑" and "↓" buttons to change frequency range.

4. Exit Program System Frequency Range by pressing the "BACK" button until the cursor is shown next to "FREQ."

5. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

NOTE: When changing the frequency range table in I-CHIP, make sure the transmitting and receiving RF boards are also changed accordingly.

6.5 Program System Channel (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter System Channel setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "CHANNEL."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.6 Program RF Power (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter RF Power setting.

3. Press the "↑" and "↓" buttons to change RF power (0.01 – 10 mW).

4. Exit Program RF Power by pressing the "BACK" button until the cursor is shown next to "RFpower."

5. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.7 Program Transmitter Inactivity Timer (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Transmitting Timer setting.

3. Press the "↑" and "↓" buttons to select __M, __S or ON (constant ON).

4. When Minutes or Seconds is selected, press the "→" button to go to the first digit on the left and press the "↑" and "↓" buttons to select numeric value.

5. Press the "→" button to go the next digit to the right and press the "↑" and "↓" buttons to select numeric value.

6. Press the "→" button again to go to the next column to select "M" for minutes and "S" for seconds. Press the "↑" and "↓" buttons to select.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Transmitter Timer by pressing the "BACK" button until the cursor is shown next to "TX TIMER."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.8 Program Password (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Password setting.

3. Press the "→" button to go to the 1st digit on the far left.

4. Press the "↑" and "↓" buttons to change numeric value.

5. Press the "→" button to go to the next digit to the right and repeat step 4.

6. Press the "BACK" button to go back to step 3.

7. Exit Program Password by pressing the "BACK" button until the cursor is shown next to "PASS WORD."

8. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

   Only PB1 through PB4 are used when using the password function. Numeric value "1" represents PB1, "2" represents PB2, "3" represents PB3 and "4" represents PB4.

   Setting "1111" → Password function disabled (manufacturer preset)
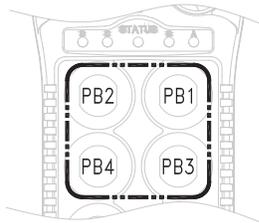
6.9 Program Pushbutton Functions (TX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Pushbutton Function setting.

3. Press the "↑" and "↓" buttons to change pushbutton function as a whole, or

4. Press the "→" button to go to the digit on the far left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Pushbutton Functions by pressing the "BACK" button until the cursor is shown next to "PB FUNC."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

*NOTE: The transmitter pushbutton function table in **Section 11 on page 51** illustrates which numeric value corresponds to which pushbutton function.*

6.10 Program Function Relay / K26 Relay (RX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Function Relay setting.

3. Press the "↑" and "↓" buttons to scroll and select.

4. Exit Program Function Relay by pressing the "BACK" button until the cursor is shown next to "FUNC RLY."

5. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

—:	START function only.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output affected by the Stop command (FUNCTION relay opens when E-stop button is pressed down).
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
S/P:	FUNCTION relay closes when Start command is initiated and opens only when transmitter power is turned off.
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.

NOTE: When finished, remove the I-CHIP and insert it into the I-CHIP programming port located on the decoder module to transfer the new setting from the I-CHIP to the receiver. Make sure JP6 jumper is inserted when transferring I-CHIP information into the receiver.

6.11 Program Brake Functions (RX)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Brake Function setting.

3. Press the "↑" and "↓" buttons to scroll and select.

4. Exit Program Brake Functions by pressing the "BACK" button until the cursor is shown next to "BRAKE."

5. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

DEMAG 1: When releasing pushbutton from 2nd speed up to 1st speed, the 1st speed output relay will open for up to 1.0 second and then closes again.

DEMAG 2: When pushbutton is pressed down to 2nd speed directly from 0 speed, the 1st speed output relay will maintain closure for up to 0.4 second before 2nd speed output relay closes. When pushbutton is released from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.5 second before going to 0 speed.

DEMAG 3: When releasing pushbutton from 2nd speed up to 1st speed, both 1st and 2nd speed output relays are opened. Release pushbutton to 0 speed and then press down to 1st speed to reengage the 1st speed output relay.

P&H: When releasing pushbutton from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.1 second before going to 0 speed.

NOTE: When finished, take out the I-CHIP and insert it into the I-CHIP programming port located on the decoder module to transfer the new Brake setting from the I-CHIP to the receiver. Make sure JP6 jumper is inserted when transferring I-CHIP information into the receiver.

6.12 Program Serial Number (Flex Pro Transmitter)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Serial Number setting.

3. Press the "↑" and "↓" buttons to change serial number as a whole, or

4. Press the "→" button to go to the 1st digit on the far left of the serial number.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "TXSN."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.13 Program Project ID (Flex Pro Transmitter)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter Project ID setting.

3. Press the "↑" and "↓" buttons to change serial number as a whole, or

4. Press the "→" button to go to the 1st digit on the far left of the serial number.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Serial Number by pressing th "BACK" button until the cursor is shown next to "PRJT."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

6.14 Program CAN ID (Flex Pro Transmitter)

1. Make sure the I-CHIP is connected to the programmer.

2. Press the "→" button to enter CAN ID setting.

3. Press the "↑" and "↓" buttons to change serial number as a whole, or

4. Press the "→" button to go to the 1st digit on the far left of the serial number.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "CAN."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX settings.

7 Flex EX2 Models (Gen2)

7.1 Program IR

7.1.1 Transmitter

1. Rotate the power switch key to OFF (0) position.

2. With the STOP button elevated, press and hold PB1 and PB3 at the same time.

3. Rotate the power switch key to ON (I) position.

4. Release PB1 and PB3 at the same time. The transmitter Status LED displays firmware version with red, green and orange flashes.

5. Press "READ" button to transfer transmitter information into the IR programmer. When the screen displays "READ OK," the transfer is complete.

6. Browse through list of settings by pressing and "↑" and "↓" buttons (*see Section 7.2 on page 19*).

7. Press "WRITE" button to transfer the new settings into the transmitter (transmitter Status LED solid orange). When the screen displays "WRITE OK," the transfer is complete (transmitter Status LED solid green for up to 2 seconds).

8. Exit Program IR by pressing the "BACK" button until the cursor is shown next to "PROGRAM."

9. Press the "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.
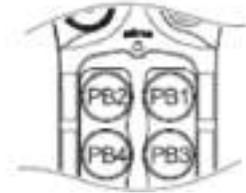
7.1.2 Receiver

1. Power on the receiver with MAIN relays deactivated (standby mode).

2. Press "READ" button to transfer receiver information into the IR programmer. When the screen displays "READ OK," the transfer is complete.

3. Browse through list of settings by pressing "↑" and "↓" buttons (*see Section 7.2 on page 19*).

4. Press "WRITE" button to transfer the new settings into the receiver (receiver Status LED solid orange). When the screen displays "WRITE OK," the transfer is complete (receiver Status LED flashes green – standby mode).

5. Exit Program IR by pressing the "BACK" button until the cursor is shown next to "PROGRAM."

6. Press the "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

NOTE: When performing infrared programming, make sure the distance between the IR programmer and the transmitter or receiver is not more than 10 cm (4 in.).

7.2 Program Serial Number (TX & RX)

1. Press "→" button to enter Serial Number setting.

2. Press "↑" and "↓" button to change serial number as a whole, or

3. Press "→" button to go to the 1st digit on the far left of the serial number.

4. Press "↑" and "↓" buttons to change numeric value.

5. Press "→" button to go to the next digit to the right and repeat step 4.

6. Press "BACK" button to return to step 2 or 3.

7. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "S/N."

8. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.3 Program System Type (TX & RX)

1. Press "→" button to enter System Type setting.

2. Press "↑" and "↓" buttons to change system type as a whole, or

3. Press "→" button to go to the digit on the far left.

4. Press "↑" and "↓" buttons to change numeric value.

5. Press "→" button to go to the next digit to the right and repeat step 4.

6. Press BACK button to go back to step 2 or 3.

7. Exit Program System Type by pressing the "BACK" button until the cursor is shown next to "TYPE."

8. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.4 Program RS Function (TX & RX)

1. Press "→" button to enter RS Function setting.

2. Press "↑" and "↓" buttons to change RS Function type number.

3. Press "→" button to select "LOCK" for all Select buttons interlocked and "UNLOCK" for all Select buttons non-interlocked.

    Type 06 can further set PB7 – PB10 Select buttons and PB11 – PB12 Select buttons "LOCK" or "UNLOCK."

4. Exit Program RS Function by pressing the "BACK" button until the cursor is shown next to "RS FUNC."

5. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.5 Program System Frequency Range (TX & RX)

1. Press "→" button to enter Frequency Range setting.

2. Press "↑" and "↓" buttons to change frequency range.

3. Exit Program System Frequency Range by pressing the "BACK" button until the cursor is shown next to "FREQ."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.6 Program System Channel (TX & RX)

1. Press "→" button to enter System Channel setting.

2. Press "↑" and "↓" buttons to change system channel as a whole, or

3. Press "→" button to go to the digit on the left.

4. Press "↑" and "↓" buttons to change numeric value.

5. Press "→" button to go to the next digit to the right and repeat step 4.

6. Press "BACK" button to go back to step 2 or 3.

7. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "CHANNEL."

8. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.7 Program RF Power (TX)

1. Press "→" button to enter RF Power setting.

2. Press "↑" and "↓" buttons to change RF power (0.01 – 10 mW).

3. Press "→" button and then "↑" and "↓" buttons to enable or disable RF power adjustment via transmitter dipswitch.

4. Exit Program RF Power by pressing the "BACK" button until the cursor is shown next to "RFpower."

5. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.8 Program Pushbutton Functions (TX)

1. Press "→" button to enter Pushbutton Function setting.

2. Press "↑" and "↓" buttons to change pushbutton function as a whole, or

3. Press "→" button to go to the digit on the left.

4. Press "↑" and "↓" buttons to change numeric value.

5. Press "→" button to go to the next digit to the right and repeat step 4.

6. Press "BACK" button to go back to step 2 or 3.

7. Exit Program Pushbutton Functions by pressing the "BACK" button until the cursor is shown next to "PB FUNC."

8. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

9. The transmitter pushbutton function table in *Section 11.2 on page 52* illustrates which numeric value corresponds to which pushbutton function.

7.9 Program Transmitter Inactivity Timer (TX)

1. Press "→" button to enter Transmitting Timer setting.

2. Press "↑" and "↓" buttons to select "_M" for minutes/seconds or "ON" for constant on.

3. When "ON" is selected, press "→" button and then "↑" and "↓" buttons to select "+START" or "+ANY."

4. When "_M" is selected, press "→" button to go to the digit on the left and press "↑" and "↓" buttons to select value. Press "→" button again to go to the next digit and press "↑" and "↓" buttons to select value.

5. Press "→" button again to select "M" for minutes or "S" for seconds. Press "↑" and "↓" buttons to select.

6. Press "→" button again to select "+START" or "+ANY" selection. Press "↑" and "↓" buttons to select.

7. Exit Program Transmitter Timer by pressing the "BACK" button until the cursor is shown next to "TX TIMER."

8. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

Transmitter inactivity timer is for setting receiver main relays cutoff time when the transmitter is not in operation for a certain period of time. When set to 5 minutes (05M), the receiver main relays are deactivated at 5.0 minutes after last transmitter operation.

Selecting "ON" means the receiver main relays are activated at all time unless the STOP button is pressed down or receiver power turned off (inactivity timer disabled).

Selecting "+START" means after 5 minutes of transmitter inactivity you must press the green START button to continue operation. Selecting "+ANY" means after 5 minutes of transmitter inactivity you can press any pushbutton to continue operation.

7.10 Program LED1 Feedback (TX)

1. Press "→" button to enter Feedback setting.

2. Press "↑" and "↓" buttons to select Off, Input number or Output number.

3. When "Input" is selected, press "→" button and then "↑" and "↓" buttons to select input number that the external source is connected to (IN1 – IN4).

4. When "Output" is selected, press "→" button and then "↑" and "↓" buttons to select which output relay to feedback to LED1 (K1 – K24).

5. Select "Off" if no feedback is required.

6. Exit Program Feedback by pressing the "BACK" button until the cursor is shown next to "LED1."

7. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.11 Program LED2 Feedback (TX)

1. Press "→" button to enter Feedback setting.

2. Press "↑" and "↓" buttons to select Off, Input number or Output number.

3. When "Input" is selected, press "→" button and then "↑" and "↓" buttons to select input number that the external source is connected to (IN1 – IN4).

4. When "Output" is selected, press "→" button and then "↑" and "↓" buttons to select which output relay to feedback to LED2 (K1 – K24).

5. Select "Off" if no feedback is required.

6. Exit Program Feedback by pressing the "BACK" button until the cursor is shown next to "LED2."

7. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.12 Program LED3 Feedback (TX)

1. Press "→" button to enter Feedback setting.

2. Press "↑" and "↓" buttons to select Off, Input number or Output number.

3. When "Input" is selected, press "→" button and then "↑" and "↓" buttons to select input number that the external source is connected to (IN1 – IN4).

4. When "Output" is selected, press "→" button and then "↑" and "↓" buttons to select which output relay to feedback to LED3 (K1 – K24).

5. Select "Off" if no feedback is required.

6. Exit Program Feedback by pressing the "BACK" button until the cursor is shown next to "LED3."

7. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.13 Program LED4 Feedback (TX)

1. Press "→" button to enter Feedback setting.

2. Press "↑" and "↓" buttons to select Off, Input number or Output number.

3. When "Input" is selected, press "→" button and then "↑" and "↓" buttons to select input number that the external source is connected to (IN1 – IN4).

4. When "Output" is selected, press "→" button and then "↑" and "↓" buttons to select which output relay to feedback to LED4 (K1 – K24).

5. Select "Off" if no feedback is required.

6. Exit Program Feedback by pressing the "BACK" button until the cursor is shown next to "LED4."

7. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.14 Program Infrared START (TX)

1. Press "→" button to enter Infrared Start setting.

2. Press "↑" and "↓" buttons to select Off or IRS.

    Select "OFF" to disable infrared START function.

    Select "IRS" to enable infrared START function.

3. Exit Program Infrared START by pressing the "BACK" button until the cursor is shown next to "IR Mode."

4. Press "↓" button to go to the next Infrared START setting.

7.15 Program Infrared START ID Code (TX)

1. Press "→" button to enter Infrared START ID code setting.

2. Press "↑" and "↓" buttons to set the 3-digit ID code as a whole, or

3. Press "→" button to go to the digit on the left.

4. Press "↑" and "↓" buttons to change numeric value.

5. Press "→" button to go to the next digit to the right and repeat step 4.

6. Press "BACK" button to go back to step 2.

    Make sure the infrared module on crane is set to same ID code as the transmitter.

    Selecting "000" disables the ID code function; therefore, any types of infrared modules can be used.

7. Exit Program Infrared START ID Code by pressing the "BACK" button until the cursor is shown next to "IR ID."

8. Press "↓" button to go to the next Infrared START setting.

7.16 Program IRS Time Out (TX)

1. Press "→" button to enter IRS Time Out setting.

2. Press "↑" and "↓" buttons to select IRS Off or IRS On.

3. Select "IRS On" if infrared START is required after every transmitter timeout.

4. Select "IRS Off" if infrared START is not required after every transmitter timeout.

5. Exit Program IRS Time Out by pressing the "BACK" button until the cursor is shown next to "IRS FUNC."

6. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

7.17 Program Channel Scanning (RX)

1. Press "→" button to enter Channel Scanning setting.

2. Press "↑" and "↓" buttons to select number of channel to scan (01 – 12).

3. Exit Program Channel Scanning by pressing the "BACK" button until the cursor is shown next to "CH SCAN."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

NOTE: Make sure positions 7 and 8 on the Channel dipswitch in the receiver are set to "11" in order for this to work.

7.18 Program Function Relay 1 / K25 Relay (RX)

1. Press "→" button to enter Function Relay 1 setting.

2. Press "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 1 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY1."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output. The relay opens when STOP button is pressed down and transmitter power is off.
S/P:	FUNCTION relay closes when Start command is initiated and opens only when transmitter power is turned off.
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.
G SENSOR:	FUNCTION relay closes when Zero-G sensor is triggered (receiver MAIN relays deactivated) and opens when receiver MAIN relays are reactivated.

7.19 Program Function Relay 2 / K26 Relay (RX)

1. Press "→" button to enter Function Relay 2 setting.

2. Press "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 2 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY2."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output. The relay opens when STOP button is pressed down and transmitter power is off.
S/P:	FUNCTION relay closes when Start command is initiated and opens only when transmitter power is turned off.
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.
G SENSOR:	FUNCTION relay closes when Zero-G sensor is triggered (receiver MAIN relays deactivated) and opens when receiver MAIN relays are reactivated.

7.20 Program Function Relay 3 / K30 Relay (RX)

1. Press "→" button to enter Function Relay 3 setting.

2. Press "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 3 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY3."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output. The relay opens when STOP button is pressed down and transmitter power is off.
S/P:	FUNCTION relay closes when Start command is initiated and opens only when transmitter power is turned off.
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.
G SENSOR:	FUNCTION relay closes when Zero-G sensor is triggered (receiver MAIN relays deactivated) and opens when receiver MAIN relays are reactivated.

7.21 Program Brake Functions (RX)

1. Press "→" button to enter Brake function setting.

2. Press "↑" and "↓" buttons to scroll and select.

3. Exit Program Brake Functions by pressing the "BACK" button until the cursor is shown next to "BRAKE."

4. Press "↑" and "↓" buttons to scroll through other Flex EX Gen2 settings.

DEMAG 1:	When releasing pushbutton from 2nd speed up to 1st speed, the 1st speed output relay will open for up to 1.0 second and then closes again.
DEMAG 2:	When pushbutton is pressed down to 2nd speed directly from 0 speed, the 1st speed output relay will maintain closure for up to 0.4 second before 2nd speed output relay closes. When pushbutton is released from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.5 second before going to 0 speed.
DEMAG 3:	When releasing pushbutton from 2nd speed up to 1st speed, both 1st and 2nd speed output relays are opened. Release pushbutton to 0 speed and then press down to 1st speed to reengage the 1st speed output relay.
P&H:	When releasing pushbutton from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.1 second before going to 0 speed.

8 Flex Mini Model

When changing the parameters of the Flex Mini, you will first need to "READ" the data from the device. After all the desired settings have been modified, you will need to "WRITE" the data back to the device.

All the following notes that are in red pertain to Flex Mini transmitters programmed to communicate with engineered Magnetek receivers.

8.1 Program Direct

1. Make sure the programming cable is connected to the system.

2. Press the "➔" button to enter Direct setting.

3. Press the "READ" button to store transmitter or receiver information into the programmer. When the screen displays "READ OK," the transfer is complete.

4. Press the "WRITE" button to transfer the stored transmitter or receiver information into a new transmitter or receiver. When the screen displays "WRITE OK," the transfer is complete.

5. Exit Program Direct by pressing the "BACK" button until the cursor is shown next to "Program."

6. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.2 Program Serial Number (TX & RX)

NOTE: This field is used to set the transmitter's five-digit access code.

1. Make sure the programming cable is connected to the system.

2. Press the "➔" button to enter Serial Number setting.

3. Press the "↑" and "↓" buttons to change serial number as a whole, or

4. Press the "➔" button to go to the 1st digit on the far left of the serial number.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "➔" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "S/N."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.3 Program Keypad Type (TX & RX)

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter Keypad Type setting.

3. Press the "↑" and "↓" buttons to change system type as a whole, or

4. Press the "→" button to go to the digit on the left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. If the value is set to a number outside of 01, 02, or 03, then the keypad will default to Type 1.

7. Press the "→" button to go to the next digit to the right and repeat step 6.

8. Press the "BACK" button to go back to step 3 or 4.

9. Exit Program Keypad Type by pressing the "BACK" button until the cursor is shown next to "KEYPAD."

10. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

Type 1	Type 2	Type 3
PB2 PB1	PB2 ON/OFF	START STOP
PB4 PB3	PB4 PB3	PB4 PB3
PB6 PB5	PB6 PB5	PB6 PB5
PB8 PB7	PB8 PB7	PB8 PB7
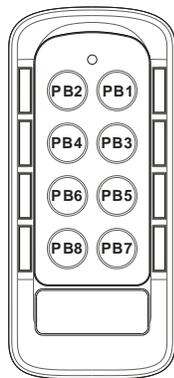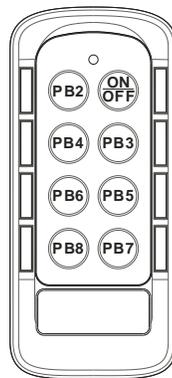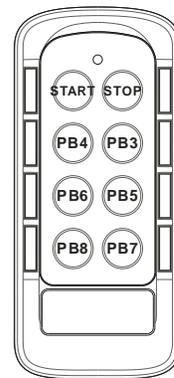
8.4 Program System Frequency Range (TX & RX)

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter System Frequency Range setting.

3. Press the "↑" and "↓" buttons to change frequency range.

4. Exit Program System Frequency Range by pressing the "BACK" button until the cursor is shown next to "FREQ."

5. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.5 Program System Channel (TX & RX)

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter System Channel setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "CHANNEL."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.6 Program RF Power (TX)

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter RF Power setting.

3. Press the "↑" and "↓" buttons to change RF power (0.01 – 10 mW).

4. Exit Program RF Power by pressing the "BACK" button until the cursor is shown next to "RFpower."

5. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.7 Program Transmitter Inactivity/Sleep Timer (TX)

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter TX Timer setting.

3. Press the "↑" and "↓" buttons to select ON (sleep timer disabled) or 01M (minute).

4. Press the "→" button to go to the digit on the far left (tens).

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right (units) and repeat step 5.

7. Exit Program Transmitter Inactivity/Sleep Timer by pressing the "BACK" button until the cursor is shown next to "TX TIMER."

8. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

8.8 Program Pushbutton Output Relay 1 (PB1/PB2) (RX)

NOTE: This field is used to set the low byte of the transmitter's ID number.

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter Function 1 setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the far left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "PB RLY1."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

> 001: On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 002: Magnet On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 003: On + Start & Off + Start pushbutton pair (for keypad type 03 only)

8.9 Program Pushbutton Output Relay 2 (PB3/PB4) (RX)

NOTE: This field is used to set the high byte of the transmitter's ID number.

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter Function 2 setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the far left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "PB RLY2."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

> 001: On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 002: Magnet On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 003: On + Start & Off + Start pushbutton pair (for keypad type 03 only)

8.10 Program Pushbutton Output Relay 3 (PB5/PB6) (RX)

NOTE: This field is used to set the low byte of the transmitter's project number.

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter Function 3 setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the far left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "PB RLY3."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

> 001: On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 002: Magnet On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 003: On + Start & Off + Start pushbutton pair (for keypad type 03 only)

8.11 Program Pushbutton Output Relay 4 (PB7/PB8) (RX)

NOTE: This field is used to set the high byte of the transmitter's project number.

1. Make sure the programming cable is connected to the system.

2. Press the "→" button to enter Function 4 setting.

3. Press the "↑" and "↓" buttons to change system channel as a whole, or

4. Press the "→" button to go to the digit on the far left.

5. Press the "↑" and "↓" buttons to change numeric value.

6. Press the "→" button to go to the next digit to the right and repeat step 5.

7. Press the "BACK" button to go back to step 3 or 4.

8. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "PB RLY4."

9. Press the "↑" and "↓" buttons to scroll through other Flex Mini settings.

> 001: On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 002: Magnet On & Off pushbutton pair (for keypad type 01, 02 and 03)
>
> 003: On + Start & Off + Start pushbutton pair (for keypad type 03 only)

9 Flex Base (ECO) Model

The Flex Base is known as the Flex ECO in the IR programmer. Please select the Flex ECO in the IR programmer in order to program the Flex Base.

9.1 Program IR

1. Make sure the transmitter is turned on.

2. When programming the transmitter, prior to turning it on, set the dipswitch position #10 to "On" or "1" position and then reset the STOP button. After programming, set it back to "Off" or "0" position.
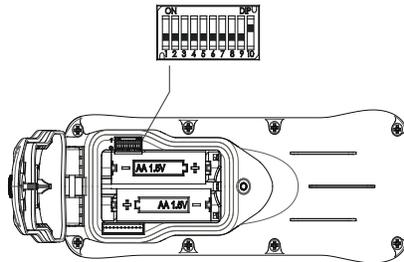
3. When programming the receiver, the power must be turned on with receiver MAIN relays deactivated. After programming, make sure to reset the receiver power by turning it off and then on again.

4. Press the "→" button to enter IR setting.

5. Press the "PAIRING" button on the receiver twice within 3 seconds to activate the receiver IR function.

6. Press "READ" button to store the transmitter information into the programmer. When the screen displays "READ OK," the transfer is complete.

7. Press "WRITE" button to transfer the stored information into the transmitter. When the screen displays "WRITE OK," the transfer is complete.

8. Exit Program IR by pressing the "BACK" button until the cursor is shown next to "Program."

9. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

NOTE: When performing infrared programming, make sure the distance between the programmer and the transmitter or receiver is within 10 cm (4 in.).
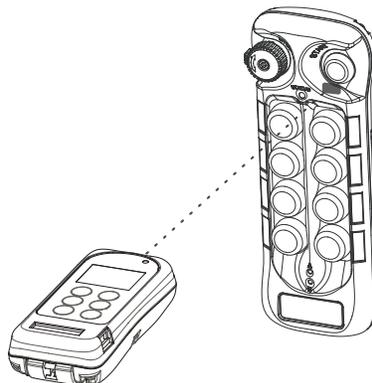
9.2 Program Serial Number (TX & RX)

1. Press the "→" button to enter Serial Number setting.

2. Press the "↑" and "↓" buttons to change serial number as a whole, or

3. Press the "→" button to go to the 1st digit on the far left of the serial number.

4. Press the "↑" and "↓" buttons to change numeric value.

5. Press the "→" button to go to the next digit to the right and repeat step 4.

6. Press the "BACK" button to go back to step 2 or 3.

7. Exit Program Serial Number by pressing the "BACK" button until the cursor is shown next to "S/N."

8. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

9.3 Program System Type (TX & RX)

1. Press the "→" button to enter System Type setting.

2. Press the "↑" and "↓" buttons to change system type as a whole, or

3. Press the "→" button to go to the digit on the far left.

4. Press the "↑" and "↓" buttons to change numeric value.

5. Press the "→" button to go to the next digit to the right and repeat step 4.

6. Press the "BACK" button to go back to step 2 or 3.

7. Exit Program System Type by pressing the "BACK" button until the cursor is shown next to "TYPE."

8. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

9.4 Program System Frequency Range (TX & RX)

1. Press the "→" button to enter Frequency Range setting.

2. Press the "↑" and "↓" buttons to change frequency range.

3. Exit Program System Frequency Range by pressing the "BACK" button until the cursor is shown next to "FREQ."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

9.5 Program System Channel (TX & RX)

1. Press the "→" button to enter System Channel setting.

2. Press the "↑" and "↓" buttons to change system channel as a whole, or

3. Press the "→" button to go to the digit on the left.

4. Press the "↑" and "↓" buttons to change numeric value.

5. Press the "→" button to go to the next digit to the right and repeat step 4.

6. Press the "BACK" button to go back to step 2 or 3.

7. Exit Program System Channel by pressing the "BACK" button until the cursor is shown next to "CHANNEL."

8. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

9.6 Program RF Power (TX)

1. Press the "→" button to enter RF Power setting.

2. Press the "↑" and "↓" buttons to change RF power (0.01 – 10 mW).

3. Exit Program RF Power by pressing the "BACK" button until the cursor is shown next to "RFpower."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

9.7 Program Pushbutton Functions (TX)

1. Press the "→" button to enter Pushbutton Function setting.

2. Press the "↑" and "↓" buttons to change pushbutton function as a whole, or

3. Press the "→" button to go to the digit on the left.

4. Press the "↑" and "↓" buttons to change numeric value.

5. Press the "→" button to go to the next digit to the right and repeat step 4.

6. Press the "BACK" button to go back to step 2 or 3.

7. Exit Program Pushbutton Functions by pressing the "BACK" button until the cursor is shown next to "PB FUNC."

8. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

The transmitter pushbutton function table in *Section 11 on page 51* illustrates which numeric value corresponds to which pushbutton function.

9.8 Program Transmitter Inactivity Timer (TX)

1. Press the "→" button to enter Transmitting Timer setting.

2. Press the "↑" and "↓" buttons to select "__M" or "__S" or "ON."

3. When "ON" is selected, press the "→" button and then the "↑" and "↓" buttons to select "+START" or "+ANY."

4. When "__M or __S" is selected, press the "→" button to go to the digit on the left and press the "↑" and "↓" buttons to select a value. Press the "→" button again to go to the next digit and press the "↑" and "↓" buttons to select a value.

5. Press the "→" button again to select "M" for minutes or "S" for seconds. Press the "↑" and "↓" buttons to select.

6. Press the "→" button again to select "+START" or "+ANY" selection. Press the "↑" and "↓" buttons to select.

7. Exit Program Transmitter Timer by pressing the "BACK" button until the cursor is shown next to "TX TIMER."

8. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

The transmitter inactivity timer is for setting the receiver main relays cutoff time when the transmitter is not in operation for a certain period of time. When set to 5 minutes (05M), the receiver main relays are deactivated at 5.0 minutes after last transmitter operation.

Selecting "ON" means the receiver main relays are activated at all times unless the STOP button is pressed down or the receiver power is turned off (inactivity timer disabled).

Selecting "+START" means after 5 minutes of transmitter inactivity you must press the green START button to continue operation. Selecting "+ANY" means after 5 minutes of transmitter inactivity you may press any pushbutton to continue operation.

9.9 Program Function Relay 1 / K25 Relay (RX)

1. Press the "→" button to enter Function Relay 1 setting.

2. Press the "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 1 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY1."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output affected by the Stop command (FUNCTION relay opens when E-stop button is pressed down).
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.

9.10 Program Function Relay 2 / K26 Relay (RX)

1. Press the "→" button to enter Function Relay 2 setting.

2. Press the "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 2 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY2."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output affected by the Stop command (FUNCTION relay opens when E-stop button is pressed down).
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.

9.11 Program Function Relay 3 / K30 Relay (RX)

1. Press the "→" button to enter Function Relay 3 setting.

2. Press the "↑" and "↓" buttons to scroll and select.

3. Exit Program Function Relay 3 by pressing the "BACK" button until the cursor is shown next to "FUNC RLY3."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

—:	START function only.
LV:	Function relay closes when receiver voltage is low.
ID:	Function relay works simultaneously with all motion commands.
NORMAL:	START function + AUX with normal momentary output.
TOGGLE:	START function + AUX with toggled/latching output.
TOG/E:	START function + AUX with toggled/latching output affected by the Stop command (FUNCTION relay opens when E-stop button is pressed down).
EXT:	FUNCTION relay works simultaneously with the receiver MAIN relays.
TDM A+B:	FUNCTION relay closes when selector switch is rotated to the A+B position and opens when rotated to A or B position (tandem monitoring output).
HORN:	FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power-on and then becomes normal momentary outputs thereafter.

9.12 Program Brake Functions (RX)

1. Press the "→" button to enter Brake function setting.

2. Press the "↑" and "↓" buttons to scroll and select.

3. Exit Program Brake Functions by pressing the "BACK" button until the cursor is shown next to "BRAKE."

4. Press the "↑" and "↓" buttons to scroll through other Flex Base settings.

DEMAG 1:	When releasing pushbutton from 2nd speed up to 1st speed, the 1st speed output relay will open for up to 1.0 second and then closes again.
DEMAG 2:	When pushbutton is pressed down to 2nd speed directly from 0 speed, the 1st speed output relay will maintain closure for up to 0.4 second before 2nd speed output relay closes. When pushbutton is released from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.5 second before going to 0 speed.
DEMAG 3:	When releasing pushbutton from 2nd speed up to 1st speed, both 1st and 2nd speed output relays are opened. Release pushbutton to 0 speed and then press down to 1st speed to reengage the 1st speed output relay.
P&H:	When releasing pushbutton from 2nd speed up to 0 speed, the 1st speed output relay will maintain closure for up to 0.1 second before going to 0 speed.

10 Firmware Update

10.1 Install Software

Install the provided software.
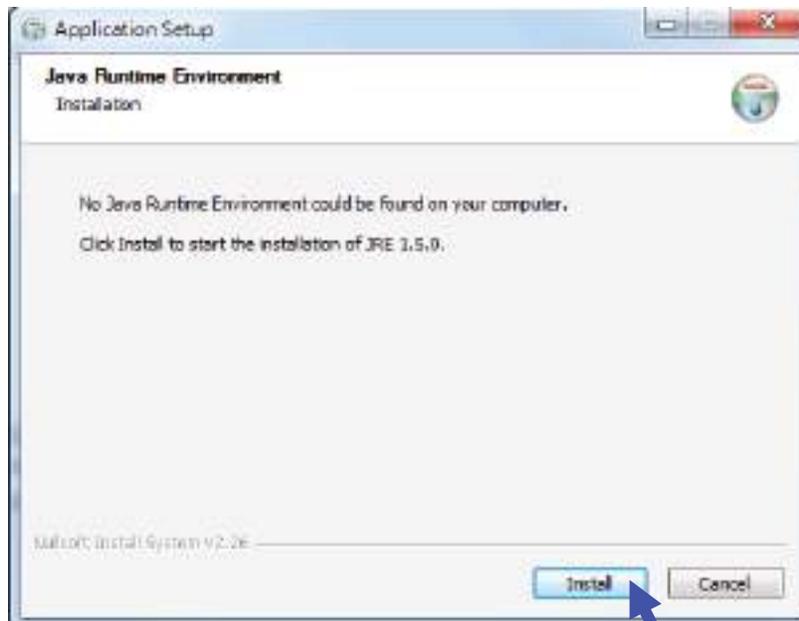
10.2 Firmware Update

10.2.1 Set dipswitch position #1 to "ON" or "1"
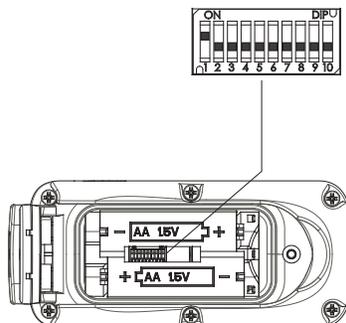
10.2.2 Insert the USB cable
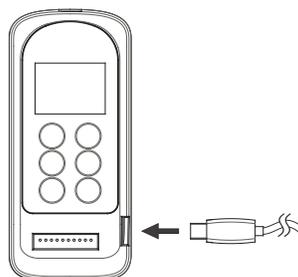
10.2.3 Please try the following if device cannot be found when inserting the USB into the computer.
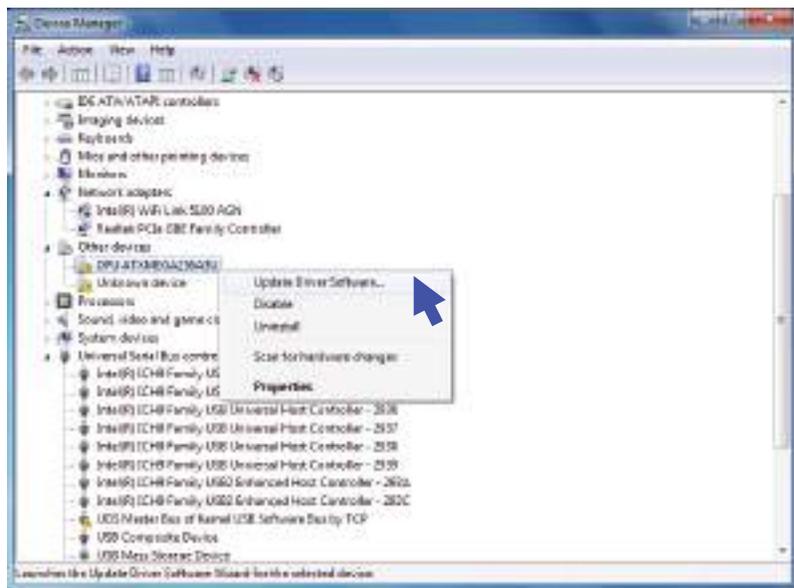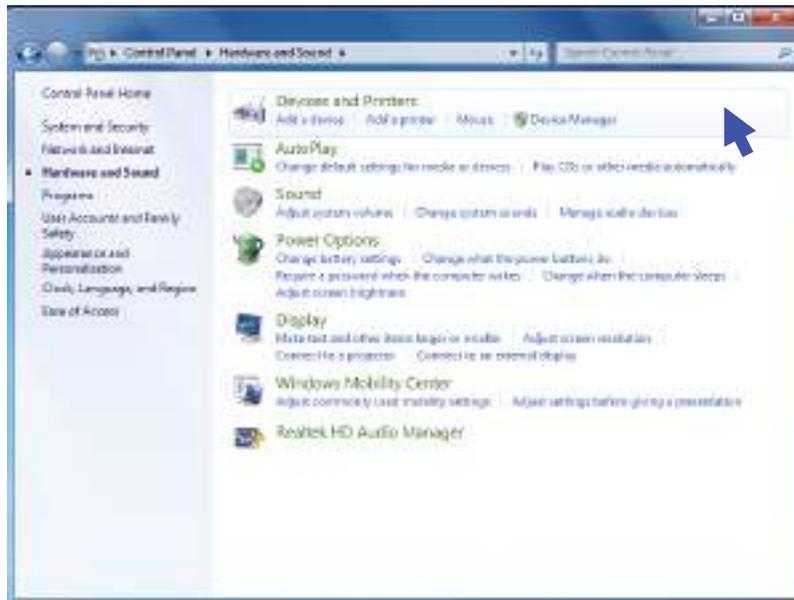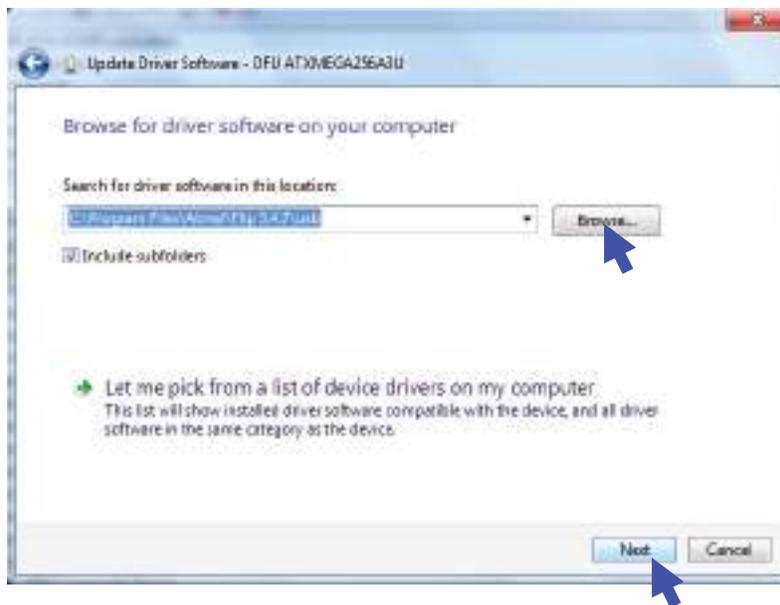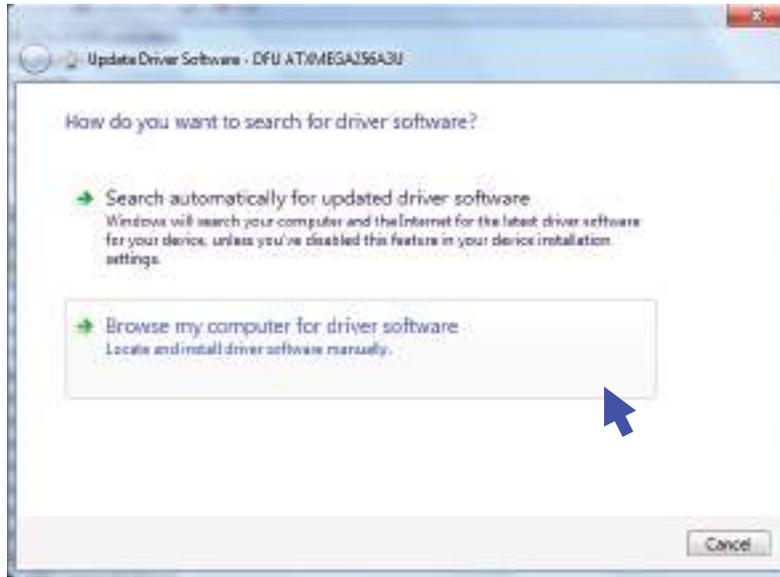
10.2.4 Open Flip 3.4.7

10.2.5 Select a target device
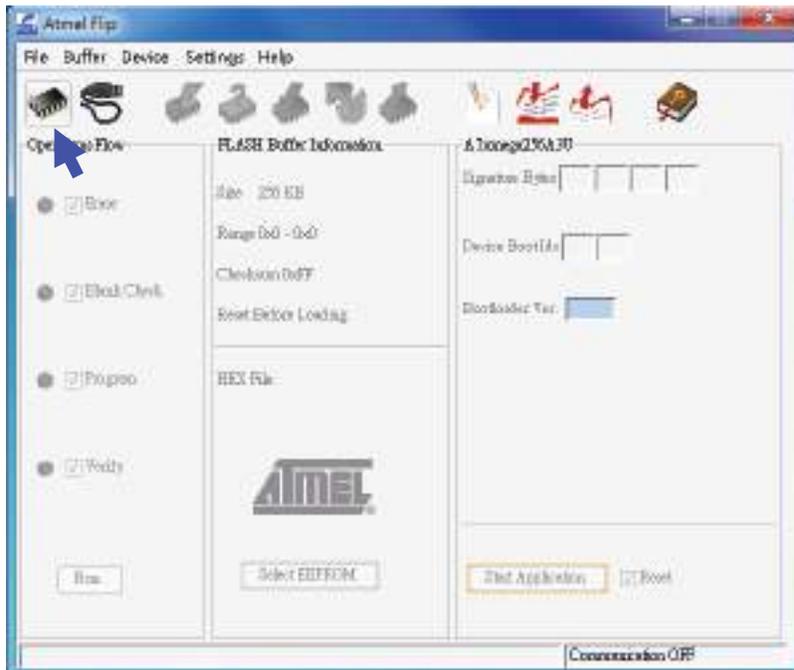
10.2.6 Select ATxmega256A3U
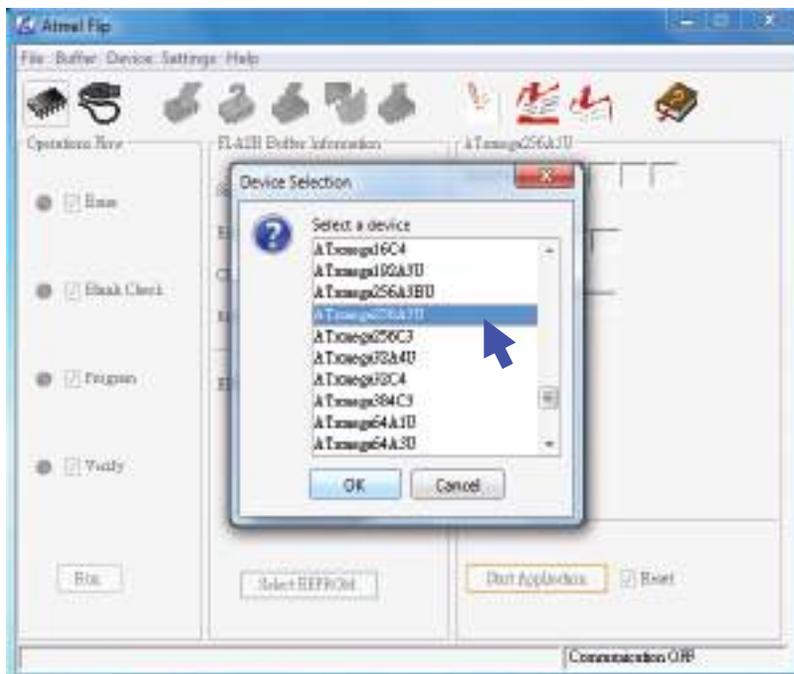
10.2.7 Select a communication medium
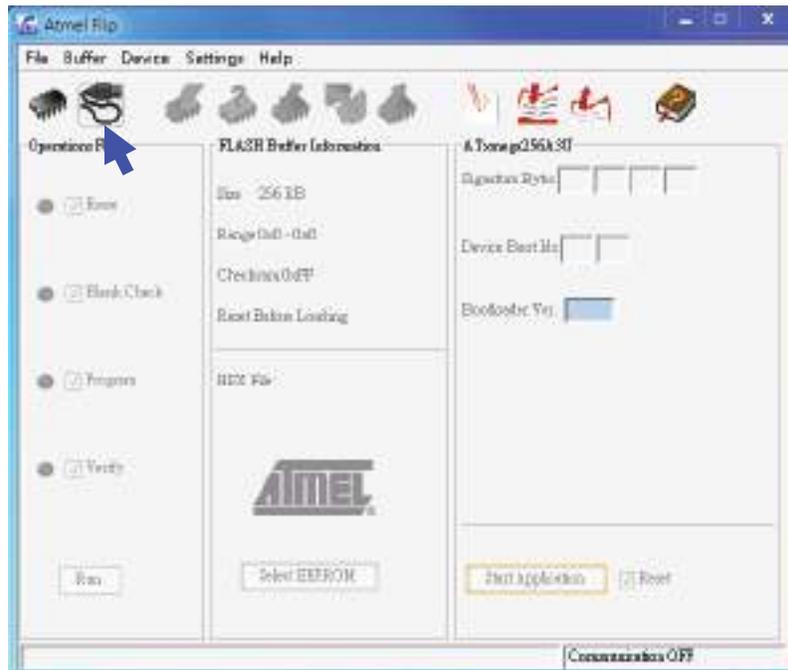
10.2.8 Select USB
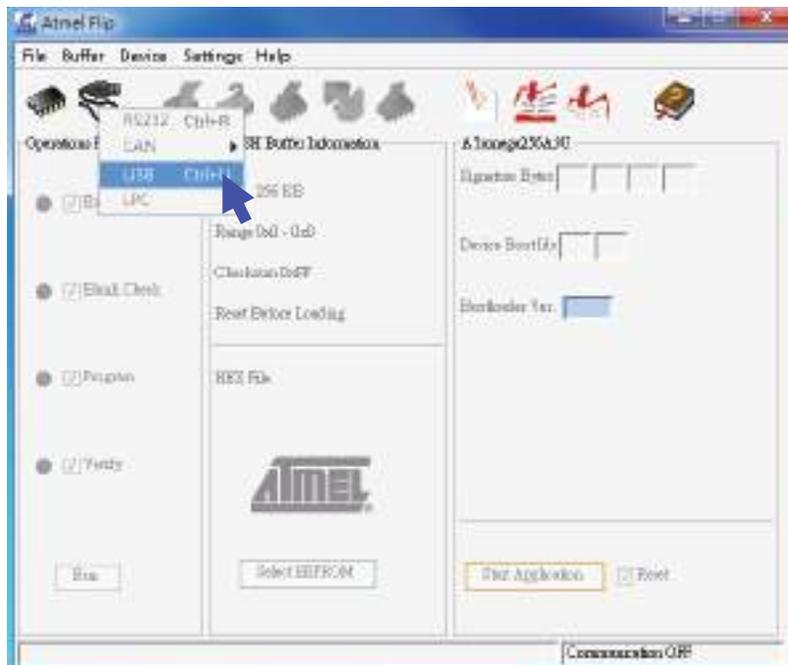
10.2.9 Open USB
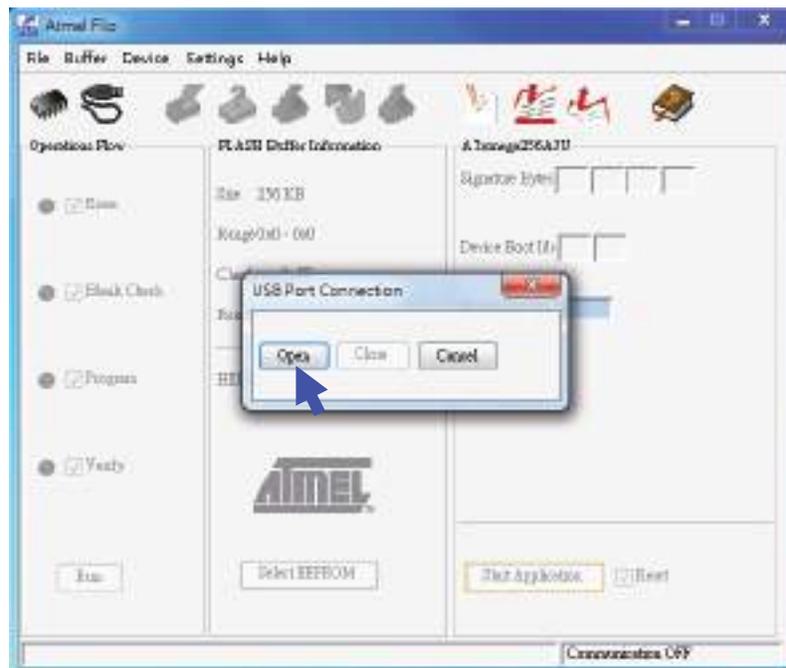
10.2.10 Load HEX file

10.2.11 Select HEX file (downloaded from the ARC website)

10.2.12 Program target device memory

10.2.13 Download and Complete

10.2.14 Remove the USB cable and set dipswitch position #1 back to "Off" or "0"

11 Pushbutton Function Table

11.1 Transmitter Toggle Functions (Standard)

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
001	00000001				4								
002	00000010			3	4								
003	00000011		2	3	4								
004	00000100	1	2	3	4								
005	00000101								4				
006	00000110							3	4				
007	00000111						2	3	4				
008	00001000					1	2	3	4				
009	00001001										4		
010	00001010									3	4		
011	00001011								2	3	4		
012	00001100							1	2	3	4		
013	00001101												4
014	00001110											3	4
015	00001111										2	3	4
016	00010000									1	2	3	4

11.2 Transmitter Toggle Functions (Inline)

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
01	00000001				4								
017	00010001			3	4								
018	00010010		2	3	4								
019	00010011	1	2	3	4								
005	00000101								4				
020	00010100							3	4				
021	00010101						2	3	4				
022	00010110					1	2	3	4				
005	00000101										4		
020	00010100									3	4		
021	00010101								2	3	4		
022	00010110							1	2	3	4		
009	00001001											4	
023	00010111										3	4	
024	00011000									2	3	4	
025	00011001								1	2	3	4	
013	00001101												4
026	00011010											3	4
027	00011011										2	3	4
028	00011100									1	2	3	4

11.3 A/B Pushbutton Select Functions (Standard)

Type-A selector sequence: A+B → A → B → A+B ...

Type-B selector sequence: Off → A → B → Off → A → B ...

Type-C selector sequence: A → B → A+B → A → B → A+B ...

Type-D selector sequence: Off → A → B → A+B → Off → A → B → A+B ...

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
029	00011101			A/1.2									
030	00011110			B/1.2									
031	00011111			C/1.2									
032	00100000			D/1.2									
033	00100001				A/3.4								
034	00100010				B/3.4								
035	00100011				C/3.4								
036	00100100				D/3.4								
037	00100101			A/1.2	A/3.4								
038	00100110			A/1.2	B/3.4								
039	00100111			A/1.2	C/3.4								
040	00101000			A/1.2	D/3.4								
041	00101001			B/1.2	B/3.4								
042	00101010			B/1.2	C/3.4								
043	00101011			B/1.2	D/3.4								
044	00101100			C/1.2	C/3.4								
045	00101101			C/1.2	D/3.4								
046	00101110			D/1.2	D/3.4								
047	00101111							A/1.2					
048	00110000							B/1.2					
049	00110001							C/1.2					
050	00110010							D/1.2					

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
051	00110011								A/3.4				
052	00110100								B/3.4				
053	00110101								C/3.4				
054	00110110								D/3.4				
055	00110111							A/1.2	A/3.4				
056	00111000							A/1.2	B/3.4				
057	00111001							A/1.2	C/3.4				
058	00111010							A/1.2	D/3.4				
059	00111011							B/1.2	B/3.4				
060	00111100							B/1.2	C/3.4				
061	00111101							B/1.2	D/3.4				
062	00111110							C/1.2	C/3.4				
063	00111111							C/1.2	D/3.4				
064	01000000							D/1.2	D/3.4				
065	01000001									A/1.2			
066	01000010									B/1.2			
067	01000011									C/1.2			
068	01000100									D/1.2			
069	01000101										A/3.4		
070	01000110										B/3.4		
071	01000111										C/3.4		
072	01001000										D/3.4		
073	01001001									A/1.2	A/3.4		
074	01001010									A/1.2	B/3.4		
075	01001011									A/1.2	C/3.4		
076	01001100									A/1.2	D/3.4		
077	01001101									B/1.2	B/3.4		
078	01001110									B/1.2	C/3.4		
079	01001111									B/1.2	D/3.4		

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
080	01010000									C/1.2	C/3.4		
081	01010001									C/1.2	D/3.4		
082	01010010									D/1.2	D/3.4		
083	01010011											A/1.2	
084	01010100											B/1.2	
085	01010101											C/1.2	
086	01010110											D/1.2	
087	01010111												A/3.4
088	01011000												B/3.4
089	01011001												C/3.4
090	01011010												D/3.4
091	01011011											A/1.2	A/3.4
092	01011100											A/1.2	B/3.4
093	01011101											A/1.2	C/3.4
094	01011110											A/1.2	D/3.4
095	01011111											B/1.2	B/3.4
096	01100000											B/1.2	C/3.4
097	01100001											B/1.2	D/3.4
098	01100010											C/1.2	C/3.4
099	01100011											C/1.2	D/3.4
100	01100100											D/1.2	D/3.4

11.4 A/B Pushbutton Select Functions (Inline)

Type-A selector sequence: A+B → A → B → A+B ...

Type-B selector sequence: Off → A → B → Off → A → B ...

Type-C selector sequence: A → B → A+B → A → B → A+B ...

Type-D selector sequence: Off → A → B → A+B → Off → A → B → A+B ...

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
101	01100101			A/1.2									
102	01100110			B/1.2									
103	01100111			C/1.2									
104	01101000			D/1.2									
033	00100001				A/3.4								
034	00100010				B/3.4								
035	00100011				C/3.4								
036	00100100				D/3.4								
105	01101001			A/1.2	A/3.4								
106	01101010			A/1.2	B/3.4								
107	01101011			A/1.2	C/3.4								
108	01101100			A/1.2	D/3.4								
109	01101101			B/1.2	B/3.4								
110	01101110			B/1.2	C/3.4								
111	01101111			B/1.2	D/3.4								
112	01110000			C/1.2	C/3.4								
113	01110001			C/1.2	D/3.4								
114	01110010			D/1.2	D/3.4								
115	01110011							A/1.2					
116	01110100							B/1.2					
117	01110101							C/1.2					
118	01110110							D/1.2					

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
051	00110011								A/3.4				
052	00110100								B/3.4				
053	00110101								C/3.4				
054	00110110								D/3.4				
119	00110111							A/1.2	A/3.4				
120	00111000							A/1.2	B/3.4				
121	00111001							A/1.2	C/3.4				
122	00111010							A/1.2	D/3.4				
123	00111011							B/1.2	B/3.4				
124	00111100							B/1.2	C/3.4				
125	00111101							B/1.2	D/3.4				
126	00111110							C/1.2	C/3.4				
127	00111111							C/1.2	D/3.4				
128	10000000							D/1.2	D/3.4				
115	01110011									A/1.2			
116	01110100									B/1.2			
117	01110101									C/1.2			
118	01110110									D/1.2			
051	00110011										A/3.4		
052	00110100										B/3.4		
053	00110101										C/3.4		
054	00110110										D/3.4		
119	01110111									A/1.2	A/3.4		
120	01111000									A/1.2	B/3.4		
121	01111001									A/1.2	C/3.4		

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
122	01111010									A/1.2	D/3.4		
123	01111011									B/1.2	B/3.4		
124	01111100									B/1.2	C/3.4		
125	01111101									B/1.2	D/3.4		
126	01111110									C/1.2	C/3.4		
127	01111111									C/1.2	D/3.4		
128	10000000									D/1.2	D/3.4		
129	10000001										A/1.2		
130	10000010										B/1.2		
131	10000011										C/1.2		
132	10000100										D/1.2		
069	01000101											A/3.4	
070	01000110											B/3.4	
071	01000111											C/3.4	
072	01001000											D/3.4	
133	10000101										A/1.2	A/3.4	
134	10000110										A/1.2	B/3.4	
135	10000111										A/1.2	C/3.4	
136	10001000										A/1.2	D/3.4	
137	10001001										B/1.2	B/3.4	
138	10001010										B/1.2	C/3.4	
139	10001011										B/1.2	D/3.4	
140	10001100										C/1.2	C/3.4	
141	10001101										C/1.2	D/3.4	
142	10001110										D/1.2	D/3.4	

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
143	10001111											A/1.2	
144	10010000											B/1.2	
145	10010001											C/1.2	
146	10010010											D/1.2	
087	01010111												A/3.4
088	01011000												B/3.4
089	01011001												C/3.4
090	01011010												D/3.4
147	10010011											A/1.2	A/3.4
148	10010100											A/1.2	B/3.4
149	10010101											A/1.2	C/3.4
150	10010110											A/1.2	D/3.4
151	10010111											B/1.2	B/3.4
152	10011000											B/1.2	C/3.4
153	10011001											B/1.2	D/3.4
154	10011010											C/1.2	C/3.4
155	10011011											C/1.2	D/3.4
156	10011100											D/1.2	D/3.4

11.5 Transmitter Toggle + A/B Pushbutton Select Functions (Standard)

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
157	10011101			1	A/3.4								
158	10011110			1	B/3.4								
159	10011111			1	C/3.4								
160	10100000			1	D/3.4								
161	10100001		1	2	A/3.4								
162	10100010		1	2	B/3.4								
163	10100011		1	2	C/3.4								
164	10100100		1	2	D/3.4								
165	10100101			A/1.2	4								
166	10100110			B/1.2	4								
167	10100111			C/1.2	4								
168	10101000			D/1.2	4								
169	10101001		3	A/1.2	4								
170	10101010		3	B/1.2	4								
171	10101011		3	C/1.2	4								
172	10101100		3	D/1.2	4								
173	10101101							1	A/3.4				
174	10101110							1	B/3.4				
175	10101111							1	C/3.4				
176	10110000							1	D/3.4				
177	10110001						1	2	A/3.4				
178	10110010						1	2	B/3.4				
179	10110011						1	2	C/3.4				
180	10110100						1	2	D/3.4				
181	10110101							A/1.2	4				

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
182	10110110							B/1.2	4				
183	10110111							C/1.2	4				
184	10111000							D/1.2	4				
185	10111001						3	A/1.2	4				
186	10111010						3	B/1.2	4				
187	10111011						3	C/1.2	4				
188	10111100						3	D/1.2	4				
189	10111101									1	A/3.4		
190	10111110									1	B/3.4		
191	10111111									1	C/3.4		
192	11000000									1	D/3.4		
193	11000001								1	2	A/3.4		
194	11000010								1	2	B/3.4		
195	11000011								1	2	C/3.4		
196	11000100								1	2	D/3.4		
197	11000101									A/1.2	4		
198	11000110									B/1.2	4		
199	11000111									C/1.2	4		
200	11001000									D/1.2	4		
201	11001001								3	A/1.2	4		
202	11001010								3	B/1.2	4		
203	11001011								3	C/1.2	4		
204	11001100								3	D/1.2	4		
205	11001101											1	A/3.4
206	11001110											1	B/3.4

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
207	11001111											1	C/3.4
208	11010000											1	D/3.4
209	11010001										1	2	A/3.4
210	11010010										1	2	B/3.4
211	11010011										1	2	C/3.4
212	11010100										1	2	D/3.4
213	11010101											A/1.2	4
214	11010110											B/1.2	4
215	11010111											C/1.2	4
216	11011000											D/1.2	4
217	11011001										3	A/1.2	4
218	11011010										3	B/1.2	4
219	11011011										3	C/1.2	4
220	11011100										3	D/1.2	4

11.6 Transmitter Toggle + A/B Pushbutton Select Functions (Inline)

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
221	11011101			1	A/3.4								
222	11011110			1	B/3.4								
223	11011111			1	C/3.4								
224	11100000			1	D/3.4								
225	11100001		1	2	A/3.4								
226	11100010		1	2	B/3.4								
227	11100011		1	2	C/3.4								
228	11100100		1	2	D/3.4								
229	11100101							1	A/3.4				
230	11100110							1	B/3.4				
231	11100111							1	C/3.4				
232	11101000							1	D/3.4				
233	11101001						1	2	A/3.4				
234	11101010						1	2	B/3.4				
235	11101011						1	2	C/3.4				
236	11101100						1	2	D/3.4				
229	11101101									1	A/3.4		
230	11101110									1	B/3.4		
231	11101111									1	C/3.4		
232	11110000									1	D/3.4		
233	11110001								1	2	A/3.4		
234	11110010								1	2	B/3.4		
235	11110011								1	2	C/3.4		
236	11110100								1	2	D/3.4		
237	11110101										1	A/3.4	

No.	Dip Set	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8	PB9	PB10	PB11	PB12
238	11110110										1	B/3.4	
239	11110111										1	C/3.4	
240	11111000										1	D/3.4	
241	11111001									1	2	A/3.4	
242	11111010									1	2	B/3.4	
243	11111011									1	2	C/3.4	
244	11111100									1	2	D/3.4	
245	11110101											1	A/3.4
246	11110110											1	B/3.4
247	11110111											1	C/3.4
248	11111000											1	D/3.4
249	11111001										1	2	A/3.4
250	11111010										1	2	B/3.4
251	11111011										1	2	C/3.4
252	11111100										1	2	D/3.4