

SRP Product Specification

Version: Draft

May 2, 2000

AMCO Automated Systems
107 Erskine Lane
Scott Depot, W. V. 25560
(304) 757-3300

SRP PRODUCT SPECIFICATION

HISTORY:

Date	By:	Revision	Description
10/5/99	Dale Jenkins	Draft	Created document
12/29/99	DRJ	Draft	Changes from Dana
5/2/00	DRJ	Draft	Added frequencies to block diagram

APPROVAL:

NAME	SIGN/DATE

SRP PRODUCT SPECIFICATION

SRP PRODUCT SPECIFICATION

Table of contents

1	OVERVIEW.....	7
1.1	DESCRIPTION	7
1.2	MODES.....	7
1.2.1	POWER ON/OFF.....	7
1.2.2	FIND SERIAL NUMBER	8
1.2.3	READ METER INDEX.....	9
1.2.4	READ PRE-DIVIDER.....	9
1.2.5	PROGRAM INDEX	10
1.2.6	USER SETUP MODE	12
2	TECHNICAL INFORMATION.....	12

SRP PRODUCT SPECIFICATION

SRP PRODUCT SPECIFICATION

1 OVERVIEW

This document describes the Short Range Programmer (SRP). The SRP is designed to provide interrogation and programming for American Meter Co. TRACE® Transponders. This document also includes technical as well as description of operation.

It is assumed the user has a working knowledge of transponder operation.

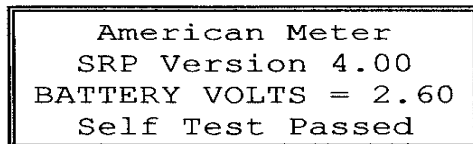
1.1 DESCRIPTION

The SRP is a low power, reduced receiver sensitivity, short range, programmer/interrogator. The maximum range of the SRP is limited to provide service to just the nearby transponder. Power supply current is kept low to provide for battery operation. An external power supply is used for recharging the internal batteries. The SRP is able to recharge while in operation. The charging supply is 6 volts at 600mA.

The SRP consists of a 4 line by 20 character LCD display and a 17 button keypad. The charging jack is on the right hand side of the unit.

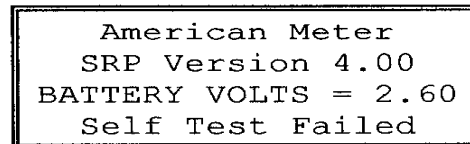
1.1.1 POWER ON/OFF

The upper left button is the power on/off switch. Holding the button down for at least 5 seconds will place the SRP into User Setup mode. The User Setup Mode will be discussed later. The power up screen shows SRP version, battery volts and self test status. See Figure 2 for power on screen message. Figure 3 shows the screen if power on test fails. In both cases, the current version of the firmware is shown along with the measured battery volts.



```
American Meter
SRP Version 4.00
BATTERY VOLTS = 2.60
Self Test Passed
```

Figure 2



```
American Meter
SRP Version 4.00
BATTERY VOLTS = 2.60
Self Test Failed
```

Figure 3

1.2 MODES

The SRP operates in several different modes. The following paragraphs will describe these modes. See figure 1.

SRP PRODUCT SPECIFICATION

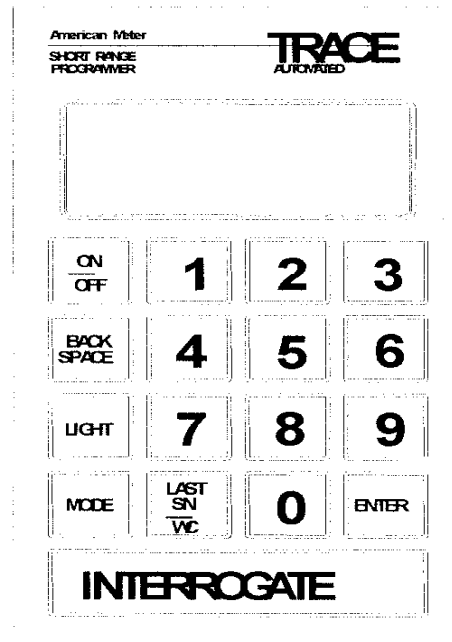


Figure 1

1.2.1 FIND SERIAL NUMBER MODE

Find mode will interrogate with wild cards or with a serial number the user enters.

Enter the serial number of the transponder if needed then hit the 'Interrogate' key. The unit will show the serial number plus the transponder type and firmware version. The serial number found will be used in each of the other modes.

If the Find mode was entered by pressing the Mode key while in the Program Index mode then the serial number field will show the wild card character (?). Hitting the LastSN/WC button will restore the serial number previously used. See Figure 4. Figure 5 shows the screen during interrogation. If the interrogation is unsuccessful, then "CARRIER NOT DETECTED" replaces "INTERROGATING" as in Figure 6. Carrier not detected displays for two seconds before the display returns to the Figure 4 screen during which the SRP will not interrogate. Figure 7 shows typical interrogation results.

```
FIND  SN/VERS/TYPE
Serial No.. ?????????
? = W.C.
```

```
FIND  SN/VERS/TYPE
Serial No.. ?????????
INTERROGATING
```

SRP PRODUCT SPECIFICATION

Figure 4

```
FIND  SN/VERS/TYPE
Serial No.. ????????
CARRIER NOT DETECTED
```

Figure 6

Figure 5

```
FIND  SN/VERS/TYPE
Serial No.. 03571641
TYPE=GAS      VERS=09
```

Figure 7

1.2.2 READ METER INDEX

This mode will read the transponder meter index (meter count). The user may enter the serial number or use the Find Mode's serial number. Hitting the Interrogate key will read the transponder's serial number and any tamper flags set. The tamper flag will show as 'TAMPER' on the last line of the screen. Reading the transponder a second time will clear the tamper condition. See Figure 8 and 9.

```
READ METER INDEX
Serial No.. ????????

```

Figure 8

```
READ METER INDEX
Serial No.. 03571641
INDEX No..= 00000000
TAMPER
```

Figure 9

1.2.3 READ PRE-DIVIDER

The Read Pre-divider mode will read the pre-divider and the compensation factor. The compensation factor will only be displayed if the transponder firmware is Version 9. If the serial number is entered by the user in this mode, the compensation factor will **not** be read. The user must first use the Find mode. The SRP will know what firmware version the transponder is and thus how to report for this mode. The pre-divider and compensation factor will show on the display as fractions. Figures 10 and 11 show SRP screens before and after interrogation. Figures 12 and 13 show the screen for transponders with version 9 firmware, also before and after interrogation.

SRP PRODUCT SPECIFICATION

```
READ PRE-DIVIDER  
Serial No.. ????????
```

Figure 10

```
READ PRE-DIVIDER  
Serial No.. 03571641  
PRE-DIV...= 001/100
```

Figure 11

```
READ PRE-DIV and CF  
Serial No.. 03571641
```

Figure 12

```
READ PRE-DIV and CF  
Serial No.. 03571641  
PRE-DIV...= 000/100  
CRCT FACT.= 001/001
```

Figure 13

1.2.4 PROGRAM INDEX

The Program index will not take wild cards. The serial number must be entered by either the Find mode or user. This mode will also program the compensation factor if the transponder firmware is version 9 or greater. The Find mode will have to be used to let the SRP know the transponder has version 9 or greater firmware before programming of the compensation factor can continue. Use the enter key to move between the different fields. Figures 14 shows the display screen before an interrogation. Figure 15 shows the display screen during the interrogation. Figures 16 and 17 show the screens for Version 9 transponder code.

Pressing the Mode key will return the SRP to the Find mode.

```
PROGRAM METER INDEX  
Serial No.. 03571641  
Index No... 00001348
```

Figure 14

```
PROGRAM METER INDEX  
Serial No.. 03571641  
Index No... 00001348  
PROGRAMMING
```

Figure 15

```
PRGRM INDEX and CF  
Serial No.. 03571641  
Index No... 00000000  
CF Ratio... 000/000
```

Figure 16

```
PRGRM INDEX and CF  
Serial No.. 03571641  
Index No... 00000000  
PROGRAMMING
```

Figure 17

SRP PRODUCT SPECIFICATION

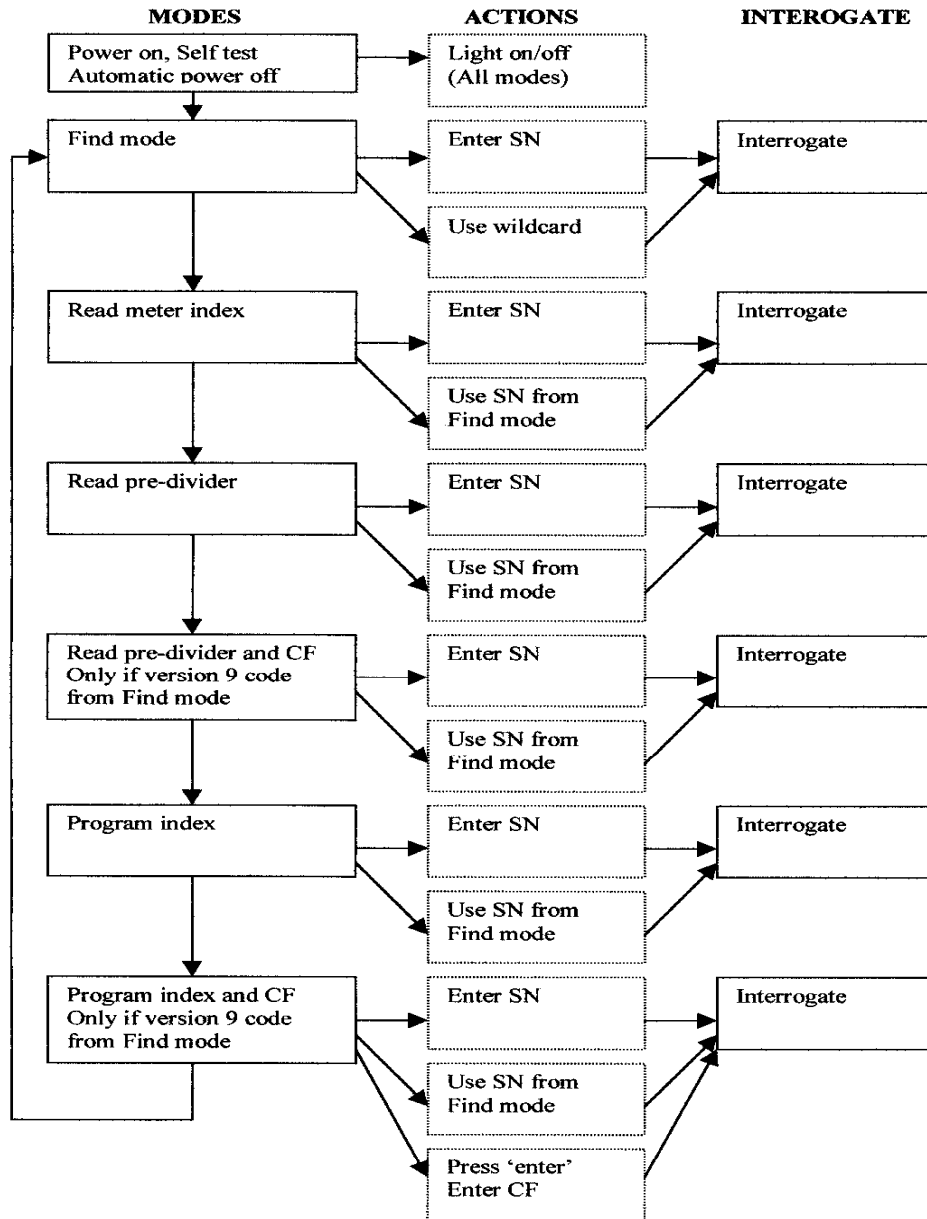


Figure 18

SRP PRODUCT SPECIFICATION

1.2.5 USER SETUP MODE

The User setup mode is entered by holding the Power ON/OFF key pressed for 5 seconds. This mode is intended for service personnel.

2 TECHNICAL INFORMATION

Figure 19 shows the block diagram.

SRP PRODUCT SPECIFICATION

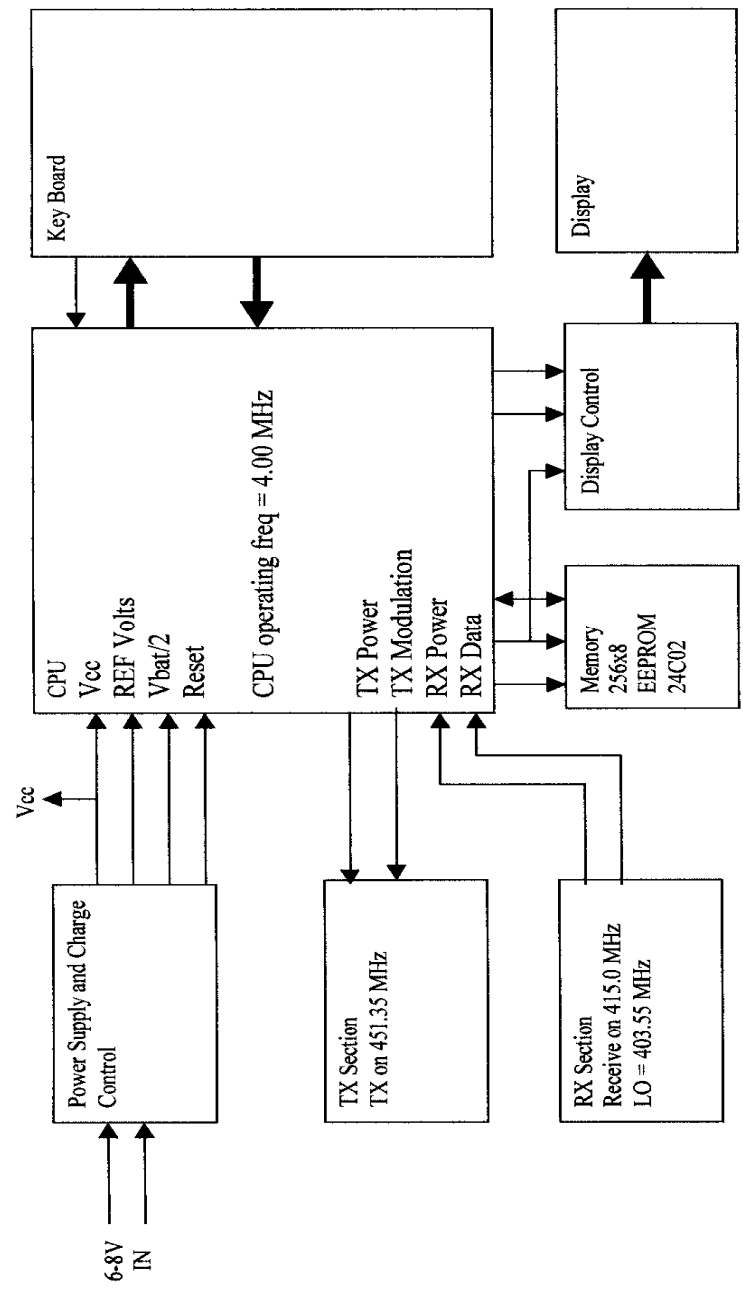


Figure 19

SRP PRODUCT SPECIFICATION

SRP PRODUCT SPECIFICATION