4-20mA Input Programming

Step 1:
Push the **SET UP RUN** button to get this screen. From here push **CUSTOMIZE** (Button 4) to go to the next screen

```
         >HOME SETUP<

SETPOINTS            DATE/TIME
CALIBRATION           CONFIGURE
TIMERS                  HISTORY
CUSTOMIZE            TOTALIZERS
ALARMS                   RELAYS
```

Step 2:
This is the Customize Screen. From here push **mA IN** (Button 9) on a MegaTron SS or select the appropriate **SYSTEM** number on a multi-system MegaTron.

```
          >CUSTOMIZE<

UNIT NAME           FLOW METERS
RELAY NAMES             NOTEPAD
SYS NAME
INPUT NAMES              mA IN
                     RUN SCREEN
```

Step 3:
This is the Customize mA Screen. From here push **INPUT 1** (Button 1) to go to the next screen

```
       >CUSTOMIZE mA INPUTS<

INPUT 1
```

Step 4:
This is the Customize mA Input 1 Screen. From here you can set a **NAME** (Button 1), **UNITS** (Button 2) and **NUMBER** range (Button 3). Press desired button to go to the next screen

```
       >CUSTOMIZE mA INPUT 1<

NAME       mAIN1
UNITS          %
NUMBER     xxxxx
```

Step 5:
Set the value of **mA INPUT 1 NAME** by using the arrow keys. Then press **ENTER** to confirm and go to the previous screen

```
       >CUSTOMIZE mA INPUT 1<
mA INPUT 1 NAME

           [mAIN1     ]

USE UP/DOWN KEYS TO CHANGE
PRESS ENTER TO ACCEPT
```

Step 6:
Set the value of **TYPE OF UNITS** by using the arrow keys. Then press **ENTER** to confirm and go to the previous screen

```
       >CUSTOMIZE mA INPUT 1<
TYPE OF UNITS

           -->   %

USE UP/DOWN KEYS TO CHANGE
PRESS ENTER TO ACCEPT
```

Step 7:
Set the value of **NUMBER FORMAT** by using the arrow keys. Then press **ENTER** to confirm and go to the previous screen

```
       >CUSTOMIZE mA INPUT 1<
NUMBER FORMAT

           -->   xxxxx

USE UP/DOWN KEYS TO CHANGE
PRESS ENTER TO ACCEPT
```

Step 8:
Push the **HOME** button to get this screen. From here push **CALIBRATION** (Button 2) to go to the next screen.

```
         >HOME SETUP<

SETPOINTS            DATE/TIME
CALIBRATION           CONFIGURE
TIMERS                  HISTORY
CUSTOMIZE            TOTALIZERS
ALARMS                   RELAYS
```

4-20mA Input Programming

Step 9:
Select the mA Inputs (Button 7) to go to mA Input calibration. Then select the mA input to calibrate.

```
      >CURRENT LOOP CALIBRATION<

INPUT 1
INPUT 2
INPUT 3
```

Step 10:
This will be the **mA INPUT CALIBRATION** screen. From here select **MAX** (Button 3) to set what the controller needs to display when it is receiving a 20mA signal. Use number keys to select and **ENTER** to set value.

```
      >mA INPUT 1 CALIBRATION<

20mA          14500
4mA            2900
MAX            200 PPM
MIN            0 PPM
OFFSET                  DISABLED
```

Step 11:
From the **mA INPUT CALIBRATION** screen select **MIN** (Button 4) to set what the controller needs to display when receiving a 4mA signal. Use number keys to select and **ENTER** to set value.

```
      >mA INPUT 1 CALIBRATION<

20mA          14500
4mA            2900
MAX            200 PPM
MIN            0 PPM
OFFSET                  DISABLED
```

WARNING:
The 20mA and 4mA calibration selections (Buttons 1 & 2) should only be selected if a 4-20mA signal generator is connected to the input.

If these are improperly set by entering an A/D value for the settings while the input is not seeing the correct signal a signal generator will be required to reset the calibration.

Step 12:
Push the **HOME** button to leave Calibration and go back to the HOME menu screen. From here push **SETPOINTS** (Button 1) to go to the next screen

```
           >HOME SETUP<

SETPOINTS                DATE/TIME
CALIBRATION              CONFIGURE
TIMERS                   HISTORY
CUSTOMIZE                TOTALIZERS
ALARMS                   RELAYS
```

Step 13:
This is the Setpoints Setup Screen. From here push **mA IN** (Button 7) to go to the next screen

```
         >SETPOINTS SETUP<
SENSORS
                           mA IN
```

Step 14:
This is the mA Inputs Screen. From here push **INPUT 1** (Button 1) to go to the next screen

```
            >mA INPUTS<
INPUT 1
```

Step 15:
This is the mA Input 1 Setpoint Review Screen. From here push **SETPOINTS** (Button 5) to go to the next screen

```
         >mA INPUT 1 SETPOINT<
          mAIN1
      SET POINT:   500%
                   RISING CONTROL
    DIFFERENTIAL:  20
  HIGH ALARM AT:   1000(OFF )
   LOW ALARM AT:   0(OFF )
    LIMIT TIME:    00:01 HH:MM
SETPOINTS
```

4-20mA Input Programming

Step 16:
This is the mA Input 1 Setpoint Change Screen. From here you can set **SET POINT** (Button 1), **DIFFERENTIAL** (Button 2), **HIGH ALARM** (Button 3), **LOW ALARM** (Button 4) and **LIMIT TIME** (Button 5). Press the desired button to go to the next screen

```
   >mA INPUT 1 SETPOINT CHANGE<

SET POINT
DIFFERENTIAL
HIGH ALARM
LOW ALARM
LIMIT TIME
```

Step 17:
Set the value of **SET POINT** by using the number keys. Use the left arrow to set the reaction direction of the set point between **RISING** or **FALLING**. Then press **ENTER** to confirm and go to the previous screen

```
   >mA INPUT 1 SETPOINT CHANGE<
SET POINT (RISES TO 00500  %)

        [RISES][__   ] %
USE NUMBER KEYS TO CHANGE, PRESS
ENTER TO ACCEPT OR BACK TO ERASE
LIMIT TIME
```

Step 18:
Set the value of **DIFFERENTIAL** by using the number keys. Then press **ENTER** to confirm and go to the previous screen

```
   >mA INPUT 1 SETPOINT CHANGE<
DIFFERENTIAL 00020  %)

          [__   ] %
USE NUMBER KEYS TO CHANGE, PRESS
ENTER TO ACCEPT OR BACK TO ERASE
LIMIT TIME
```

Step 19:
Set the **HIGH ALARM** settings for **VALUE** (the reading that will give a High Alarm) and **NOTIFICATION**. Press **ENTER** to confirm and go to the previous page

```
      >mA INPUT 1 HIGH ALARM<
V  High Alarm   00020  %)
A
           [__    ] %
   USE NUMBER KEYS TO CHANGE, PRESS
   ENTER TO ACCEPT OR BACK TO ERASE
```

Step 20:
Set the value of the **ALARM NOTIFY** by using the arrow keys. Then press **ENTER** to confirm and go to the previous screen.
Note: Display - will appear on controller display only, Remote - appears through email if controller is online, or both Dis/Remote

```
      >mA INPUT 1 HIGH ALARM<
V
A  ALARM NOTIFY (OFF    )

            --> OFF
   USE UP/DOWN KEYS TO CHANGE
   PRESS ENTER TO ACCEPT
```

Step 21:
Repeat Steps 19 and 20 for the **LOW ALARM**.
Press **BACK** to return the mA Input 1 Set Points

```
   >mA INPUT 1 SETPOINT CHANGE<

SET POINT
DIFFERENTIAL
HIGH ALARM
LOW ALARM
LIMIT TIME
```

4-20mA Input Programming

Step 22:
Set the value of **LIMIT TIME** by using the number keys. Then press **ENTER** to confirm and go to the previous screen. The Limit Time and the Alarm Notification will need to be set. Press **HOME** when finished to return to the **HOME** menu

```
   >mA INPUT 1 SETPOINT CHANGE<

SET POINT
DIFFERENTIAL
HIGH ALARM
LOW ALARM
LIMIT TIME
```

Note: If the Limit Time is met a relay activated by the 4-20mA input will be forced off until the Set Point has been satisfied and reset.

Step 23:
From the **HOME** menu select the **CONFIGURE** (Button 7) to go to the next screen

```
          >HOME SETUP<

SETPOINTS            DATE/TIME
CALIBRATION          CONFIGURE
TIMERS                 HISTORY
CUSTOMIZE          WATER METER
ALARMS                  RELAYS
```

Step 24:
This is the Configure Screen. From here push the **RELAYS** (Button 2) to go to the next screen

```
         >CONFIGURE<

PASSWORD              CONTRAST
RELAYS              TEMP SCALE

HISTORY               SYS INFO
                       FACTORY
```

Step 25:
This is the Configure Relays screen. From here push the **RELAY** desired then go to the next screen

```
        >CONFIG RELAYS<

RELAY 1
RELAY 2
RELAY 3                6 TO 10
RELAY 4
RELAY 5
```

Step 26:
This is the Relay Setup Screen. From here push the **MAIN ACTION** (Button 1) to go to the next screen

```
        >RELAY 5 SETUP<

MAIN ACTION - OFF       DISABLE 1
ACTIVATOR 2             DISABLE 2
ACTIVATOR 3             DISABLE 3
ACTIVATOR 4             DISABLE 4
                  00 - DAILY MAX
```

Step 27:
This is the Relay Setup screen. From here select the Main Action that is going the drive your relay by using the Arrow buttons. Then press **ENTER** and then **HOME** to go to the next screen. **Note:** You may need to repeat this for each Relay to ensure that each one has the correct action assigned to it for your application

```
        >RELAY 5 SETUP<

MAIN ACTION - OFF       DISABLE 1
ACTIVAT5 2             DISABLE 2
ACTIVATOR 3             DISABLE 3
ACTIVATOR 4             DISABLE 4
                  00 - DAILY MAX
```

4-20mA Input Programming

Step 28:
Next you may need to assign additional Activators or Disablers for a relay. For example a relay with a Main Action of a mA INPUT set point may need to have a Disabler for a no flow alarm since this is not an automatic action for mA inputs. From the Relay Setup screen select Disabler 1 (Button 6) to go to the next screen

```
        >RELAY 5 SETUP<

MAIN ACTION - OFF        DISABLE 1
ACTIVATOR 2              DISABLE 2
ACTIVATOR 3              DISABLE 3
ACTIVATOR 4              DISABLE 4
                  00 - DAILY MAX
```

Step 29:
Select the action to disable relay using the Arrow buttons. Then press **ENTER** and **BACK** to select more Disablers or **HOME** if finished

```
        >RELAY 5 SETUP<

MAIN ACTION - OFF        DISABLE 1
ACTIVATOR 2              DISABLE 2
ACTIVATOR 3              DISABLE 3
ACTIVATOR 4              DISABLE 4
                  00 - DAILY MAX
```

Step 30:
Select **DAILY MAX** to set a maximum accumulated number of hours that the relay can be on for a 24 hour period the using the Arrow buttons. Then press **ENTER** then set the ALARM notification desired, press **ENTER** and **HOME** if finished

```
        >RELAY 5 SETUP<

MAIN ACTION - OFF        DISABLE 1
ACTIVATOR 2              DISABLE 2
ACTIVATOR 3              DISABLE 3
ACTIVATOR 4              DISABLE 4
                  00 - DAILY MAX
```

NOTE: If the maximum number of hours that a relay can be on is met the relay will be forced off and an alarm sent. The Daily Max time and alarm are automatically reset at midnight allow the relay to run if called to do so for another Daily Max amount.