QA16 System Characteristics .............................................. 1

1. LED Description and Keypad Reference .......................... 2
   1.1. LED Description .................................................. 2
   1.2. Keypad Reference ................................................. 3

2. LCD Reference .......................................................... 5
   2.1. LCD Display Description ........................................ 6
   2.2. LCD Function Selection List Instruction .................... 8
       (1) Time Setting .................................................... 8
       (2) Alarm Data ....................................................... 8
       (3) WireBreak Data ................................................ 9
       (4) Fault Data ...................................................... 9
       (5) History Log .................................................... 10
       (6) History Log CLR ............................................... 11
       (7) Alarm Delay .................................................... 11
       (8) Download File .................................................. 11
       (9) Output Delay ................................................... 12
       (A) Status Test ...................................................... 12
       (B) Status Review .................................................. 13
       (C) Printer Setting ................................................ 14
       (D) Loop Setting .................................................... 15
       (E) System Review ................................................ 15

3. System Wiring Instruction .............................................. 16

4. Installation and testing notes ....................................... 16

5. Wiring Diagram .......................................................... 17
   (1) Detector Wiring .................................................. 18
   (2) Area Bell Wiring .................................................. 20
   (3) Manual Call Point Wiring ....................................... 22

6. Annunciator Wiring ..................................................... 23

7. Networking Wiring ...................................................... 25

8. Addressable Point Number Setting ................................. 27
QA16 System Characteristics

- Each loop can connect with 250 devices.
- Easy system programming through PC to panel.
- Event log can store up to 2030 events.
- Individual loop module test feature to save time on panel test.
- Large LCD screen (40 x 15 lines) allows more events to be displayed on the same screen.
- Location name on the LCD shows 24 letters including spaces.
- Loop devices can be set up to be temporarily isolated.
- On-board Self-test feature for simulating alarm output.
- Optional thermal printer can printout complete panel status.
- The maximum of QA16 is 32 loops, 560 sets relay output (optional) and 4000 sets co-active.
- The programming information will not disappear due to AC power fault or standby power fault.
1. LED Description and Keypad Reference

1.1. LED Description

<table>
<thead>
<tr>
<th>Number</th>
<th>Denomination</th>
<th>LED Indications</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>AC POWER LED</td>
<td>Indicates the AC power status is under AC220V/60Hz. (Voltage Range: AC220V +/- 15%)</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>[2]</td>
<td>STANDBY POWER LED</td>
<td>Indicates the control panel is equipped with standby power in case of AC power failure. The standby battery will be charged when the AC power works.</td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>[3]</td>
<td>MANUAL CALL POINT LED</td>
<td>Immediately indicates a manual call point activation.</td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>[4]</td>
<td>FAULT LED</td>
<td>Indicates an active system fault condition which could include missing end-of-line resistor, loop, wirebreak, fuse, fault, module fault, AC/DC fault or repeated addressable point number. The buzzer will sound when FAULT LED goes on. Repeated addressable point number will also be indicated on the LCD.</td>
<td></td>
<td>ON</td>
</tr>
</tbody>
</table>
### 1.2. Keypad Reference

The switches are with the LEDs along the bottom of the keypad. The LEDs will be on in abnormal condition and will be off in normal condition.

**[10] RESET Switch**

Press RESET to reset the panel from an alarm, wirebreak and any other abnormal status. The LED is on while resetting and it goes off when the panel finishes resetting. It takes 30 seconds to reset the panel and the panel will be in normal status after checking loops for any abnormal status.

**[11] BATTERY TEST Switch**

Normally, a panel uses AC power. Press BATTERY TEST switch to test the backup batteries. The LED is on while testing batteries and it goes off when batteries test is finished.

**[12] ALARM DELAY Switch**

Alarm delay reduces false alarms due to pulse and noise signals. After ALARM DELAY is pressed, the LED is on which means alarm delay is removed. LED goes off when alarm delay is reinstated.

**[13] MUTE Switch**

A buzzer on the panel beeps during alarm, wirebreak and other abnormal status.

a. Temporary Mute: Press MUTE switch once to stop a buzzer temporarily. The LED will light. The buzzer will become active again if the panel detects any alarm, wirebreak and other abnormal status. Press MUTE switch again to turn off the LED.

<table>
<thead>
<tr>
<th>Number</th>
<th>Denomination</th>
<th>LED Indications</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[5]</td>
<td>TEST LED</td>
<td>Indicates that alarm, wirebreak or disable test status.</td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>[6]</td>
<td>HIGH_VOLTAGE LED</td>
<td>Indicates that the voltage of panel is higher than requested, eg. AC220V +15% (about 253V)</td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>[7]</td>
<td>LOW_VOLTAGE LED</td>
<td>Indicates that the voltage of panel is lower than requested, eg. AC220V -15% (about 187V)</td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>[8]</td>
<td>FIRE LED</td>
<td>Indicates that the panel is receiving a fire alarm signal or is being tested. If a new fire alarm signal is received when operating this control panel, the operation will be interrupted and the fire alarm control panel will respond to the signal.</td>
<td></td>
<td>Blinking</td>
</tr>
<tr>
<td>[9]</td>
<td>PHONE LED</td>
<td>Indicates that a phone jack is plugged into a manual call point phone jack, the phone LED is on and the buzzer is sounding.</td>
<td></td>
<td>ON</td>
</tr>
</tbody>
</table>
b. **Long-Term Mute**: Press MUTE switch for 3 seconds to disable the buzzer. The LED will flash. The buzzer will not be active again even if the panel detects any alarm, wirebreak and other abnormal status. Press MUTE switch again to return to normal status. The LED will go off.

c. **Fault Status**: When it is in fault status, the panel buzzer beeps once every 6 seconds.

d. **Wirebreak Status**: When it is in wirebreak status, the panel buzzer beeps once every 2 seconds.

e. **Alarm**: When it is active, the panel buzzer beeps continuously.

f. **Monitoring Device Active**: A panel buzzer beeps when the monitor device is active. It beeps 3 (short times) every 5 seconds.

[14] **BELL Switch**

Press BELL switch to mute bells which are connected to the panel. The LED will light. Press BELL switch again to remove mute. The LED will go off.

[15] **Relay O/P 1 Switch**

[16] **Relay O/P 2 Switch**

[17] **Relay O/P 3 Switch**

[18~20] **Review Switch**

If any alarm, wirebreak, or fault happens, the LED display for ALARM, WIRE-BREAK, or FAULT will show the number of alarms. Press REVIEW switch to view the details on the LCD screen.

[21] **Number Keypad, MENU Key, and MAIN Key**

![Number Keypad Image]

a. **Number Keypad (0~9)**

b. **MENU Key (F)**

c. **MAIN Key (ESC)**

[22] **ARROW Keys, ENTER Key**

a. **UP, DOWN, LEFT and RIGHT**

b. **ENTER Key (ENT)**
2. LCD Reference

LCD screen has a protection function. If the keyboard is unused for more than 30 seconds, the LCD light goes off. Press any key to turn on the LCD light again. If the panel detects an alarm, fault or other abnormal signal, the LCD light will come on and display the details.

Users can make the following selections in the function selection list,
1. Time Setting
2. Alarm Data
3. WireBreak Data
4. Fault Data
5. History Log
6. History Log CLR
7. Alarm Delay
8. Download File
9. Output Delay
A. Status Test
B. Status Review
C. Printer Setting
D. Loop Setting
E. System Review

Alarm=0000  WireBreak=0000  Fault=0000
2010/01/01  10 : 15 : 08

System Normal

【Picture 1 The initial screen】
2.1. LCD Display Description

(1) Before you can enter the Function Selection List Screen, you need to input the access code: “0000”. The screen will return to initial screen if the code is wrong. If the access code is correct, the screen will show “Change Access code”. Just please press if you don’t want to change the code. You may enter new number and press to change the code and enter the Function Selection List Screen (The access code has been changed successfully).

※ Notice: If no items are selected, the screen will return to the initial screen after 30 seconds.
(2) Function Selection List Screen
Press \textbf{MENU}, and then press \textbf{LEFT}. It will appear as in Picture 4.

(3) The first two lines on the LCD show the system data, the date and time and the name of the function.

(4) The last 12 lines on the LCD display six events. Each event has an area name, status, activity time, kinds of module (loop number and point number).
2.2. LCD Function Selection List Instruction

(1) Time Setting
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (1) and then press to enter the screen below. Press to return to Function Selection List screen.

The cursor

b. Use keys to move the cursor left and right. Move to the number you want to change and press a number key. After completing, press to change the date.

(2) Alarm Data
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (2) and then press to enter the screen below. Press to return to Function Selection List screen.

Picture 1 Screen shows no activity]

Check data or print data

Picture 2 Screen shows alarm activity]

b. Picture 2 Items Description
Check: Only six events are displayed at one time. Use keys to move up and down, so you may check all the Alarm data.
Print: Use keys to move cursor right to “Print” and press to print the screen. After printing, the cursor will return to Check selection. You will need check other screens before reprinting the same screen.

(3) WireBreak Data
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (3) and then press to enter the screen below. Press to return to Function Selection List screen.

b. Picture 2 Items Description
Check: Use keys to move up and down, so you may check all the WireBreak data.
Print: Use keys to move cursor right to “Print” and press to print the screen. After printing, the cursor will return to Check selection. You will need check other screen before reprinting the same screen.

(4) Fault Data
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (4) and then press to enter the screen below. Press to return to Function Selection List screen.
Alarm=0000 WireBreak=0000 Fault=0000
Fault 2010/01/01 10:15 24

【Picture 1 Screen shows no activity】

Alarm=0000 WireBreak=0000 Fault=0001
Fault Data Print 2010/01/01 10:15 24
0188 Module 01-003 Fault
2010/01/01 10:22.19 01-003

【Picture 2 Screen shows fault activity】

Check data or print data

b. Picture 2 Items Description

Check: Use keys to move up and down, so you may check all the Fault data.
Print: Use keys to move cursor right to “Print” and press to print the screen. After printing, the cursor will return to Check selection. You will need check other screen before reprinting the same screen.

(5) History Log

a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (5) and then press to enter the screen below. Press to return to Function Selection List screen.
※ History Log can save 2030 events.

b. Picture 2 Items Description

Check: Use keys to move up and down, so you may check all the History Log.
Print: Use keys to move cursor right to “Print” and press to print the screen. After printing, the cursor will return to Check selection. You will need check other screen before reprinting the same screen.
(6) History Log CLR
a. To clear the memory: Enter Function Selection List Screen first. Use keys to choose the items. Choose (6) and then press to enter the screen below. Press to return to Function Selection List screen.

b. After entering above screen, choose whether to delete the memory data or not. Use keys to move right and left. To delete all the data, choose YES and then press . It will be return to checking memory data screen after deleting data.

(7) Alarm Delay
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (7) and then press to enter the screen below. Press to return to Function Selection List screen.

b. This screen sets the length of the time the alarm delays before responding to incoming signals. Press to move up and down to increase or decrease the value. The number options are 05 seconds, 10 seconds, 15 seconds, 20 seconds, 25 seconds, 30 seconds, 35 seconds or 40 seconds.

(8) Download File
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (8) and then press to enter the screen below. Press to return to Function Selection List screen.
b. USE keys to move the cursor left or right to answer Download, Upload or No, and move up and down to select the Data Bank Number. Press to download, upload or exit.
※ Notice for download and upload: Please refer to our programming manual.

(9) Output Delay
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (9) and then press to enter the screen below. Press to return to Function Selection List screen.

b. This screen sets the length of the time the control panel delays before activating external modules, such as sounders. Press keys to increase or decrease the value. The numbers set the time delay in multiples of 4. For example, if you choose 01, a signal will have to last 4 seconds to trigger the alarm. 00, no delay. 01, 4 seconds, 02, 8 seconds, and so on, up to 99 (396 seconds).

(A) Status Test
a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (A) and then press to enter the screen below. Press to return to Function Selection List screen.
b. Selection Description

(I) Select loop number: Press up and down keys to find the loop number you want to test (01~08).

(II) Select module number: To select the module number, press keys to move the cursor to the right, then use up and down keys to find the module number you want to test (001~250).

(III) Select test status: To select the test status, press keys to move the cursor to the right, then use up and down keys to find the test status you want to test: Enable, Alarm, WireBreak or Disable.

After choosing loop number, module number and test status, press key to conduct the test. Choose Enable status and press key to return to the previous test status.

(IV) Select page number: To select the page number, press keys to move the cursor to the right, then use up and down keys to find the page number you want to check. (page 1~4)

※ You may also check the simultaneous action and relay output function, and confirm the programming.

(B) Status Review

a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (B) and then press to enter the screen below. Press to return to Function Selection List screen.
b. Picture 1: To check all the test states, use keys to move from one test status to another.

Picture 2: It shows “Page” when there are more than 6 events. To check all events, press keys to move the cursor to the right, then use up and down keys to check all the events.

(C) Printer Setting

a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (C) and then press to enter the screen below. Press to return to Function Selection List screen.

b. Use keys to move up and down to choose enable or disable, and then press .

Enable: It prints automatically when receiving any signal of alarm, wirebreak, AC power or battery power shortage and restoration, or other abnormal signal.

Disable: You need to select print and press to print the signals of alarm, wirebreak, AC power or battery power shortage and restoration, or other abnormal signal.
(D) Loop Setting

a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (D) and then press to enter the screen below. Press to return to Function Selection List screen.

b. Use keys to move up and down to choose the loop number. (from loop 1 to loop 8) After choosing the loop, use keys to move left and right to enable or disable and then press . After pressing , the panel will reset and enable or disable the chosen loop.

※ Next to the loop number, you may see Normal which means this loop is connected to a PC board. If it shows Fault, it means the PC board is disconnected. Whenever the panel is turned on, it checks all the loops.

For example, if the PC boards of loop 1, 2, 3, 4, 6, 8 are connected, the LCD displays loop 1, 2, 3, 4, 6, 8 Normal and loop 5 and 7 Fault.

(E) System Review

a. Enter Function Selection List Screen first. Use keys to choose the items. Choose (E) and then press to enter the screen below. Press to return to Function Selection List screen.

b. Here you may check system data, for example number of loops (the enabled loops), total number of modules (250), and fire events.
3. System Wiring Instruction

(1) Signal wire: 2-core 1.2mm shielded wire X 1 (S+, S-)
   ※ Distance less than 500m, use 1.2mm wire. Distance from 500m to 1000m, use 2.0mm
   ※ Signal wire is used with EMT to avoid being affected by other power sources, especially those over 110 or 220 V AC
   ※ Use heatproof (HR) wiring to connect panel to modules
   ※ Wire usage should be in accordance with the local regulation
(2) Indicating-lamp wire: 1.6mm X 2
(3) Telephone wire: 1.6mm X 2 (TL, Tc)
(4) Bell wire: SND 1.6mm X 2 for bell and buzzer
(5) Load power wire: 1.6mm X 2

4. Installation and Testing Notes

(1) The wire to detectors should not be too close to the installation screw in the detector to avoid false alarms and low resistance.
(2) The resistance DC 500V between conventional detector contacts L and LC and ground must be at least 1MΩ.
(3) The resistance DC 500V between this addressable control panel contacts S+, S- and ground must be at least 2MΩ.
(4) Use wires of different color to avoid confusion.
(5) Keep distance between wires and label wires clearly.
(6) The total maximum power output is 24V DC 2 A for bell, indicating-lamp and load. Use additional power supply if more than the maximum power output is required.
   ※ Please add terminal blocks on each floor to check wire.
(7) Fuses:
5. Wiring Diagram

- **Module**
  - A
  - S+
  - S-
  - B
  - S+
  - S-

- **Telephone**
  - TL
  - TC
  - H1
  - H1
  - H2
  - H2

- **Relay output**
  - +
  - -

- **Indicating lamp**
  - +
  - -

- **Load output**
  - +
  - -

- **Output DC 24V**
  - +
  - -

- **Area bell**
  - general alarm

- **AC 220V 60Hz**
  - L
  - L
(1) Detector Wiring

Addressable Detectors

To the Next Device

Isolator Module

Control Panel

QA17-K Monitor Module

S+ S- S+ S-

QA17-H Control Panel

QA17-B Control Module

Dry Contacts

Conventional Detectors

Diagram 1

Diagram 2

Detector Wiring

Diagram 1

Diagram 2
Diagram 3

Addressable Detectors

To the Next Device

Up to 30 pcs Addressable Detectors

QA16 Control Panel

Isolator Module

4$+

S-

S+ S-

L

LC

1

23

4

S+

S-

LLL

SS

1

23

4

LC

Addressable Detectors

To the Next Device

Up to 30 pcs Addressable Detectors

QA17-H Isolator Module
(2) Area Bell Wiring
(3) Manual Call Point Wiring

Diagram 1

Diagram 2

Addressable Manual Call Point

Control Panel

Isolator Module

To the Next Device

QA17-H

QA16

QA19

QA0817
6. Annunciator Wiring

(1) Signal contacts:
Connect QA16 control panel’s “S+” to annunciator’s “S”
Connect QA16 control panel’s “S-” to annunciator’s “SC”

(2) Telephone contacts:
Connect QA16 control panel’s “TL” to annunciator’s “T”
Connect QA16 control panel’s “TC” to annunciator’s “TC”

(3) DIP switch settings
a.(I) QA16 control panels without annunciators: Please adjust the switch to “0” for the control panels.
(I) QA16 control panels with annunciators: Please adjust the switch to “1” for all control panels and “2” for all annunciators.
b. All control panels and annunciators need binary dip switch number, so please set up the dip switch in the control panel and annunciators from No. 1 to No. 32.

Example: Panel No. 1

“ON” position is “1” and numeric is “0”. For example, the first control panel is 10000, the second panel is 01000 and so on. Control panel number’s corresponding dip switch is as below.

<table>
<thead>
<tr>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>10000</td>
<td>09</td>
<td>10010</td>
<td>17</td>
<td>10001</td>
<td>25</td>
<td>10011</td>
</tr>
<tr>
<td>02</td>
<td>01000</td>
<td>10</td>
<td>01010</td>
<td>18</td>
<td>01001</td>
<td>26</td>
<td>01011</td>
</tr>
<tr>
<td>03</td>
<td>11000</td>
<td>11</td>
<td>11010</td>
<td>19</td>
<td>11001</td>
<td>27</td>
<td>11011</td>
</tr>
<tr>
<td>04</td>
<td>00100</td>
<td>12</td>
<td>00110</td>
<td>20</td>
<td>00101</td>
<td>28</td>
<td>00111</td>
</tr>
<tr>
<td>05</td>
<td>10100</td>
<td>13</td>
<td>10110</td>
<td>21</td>
<td>10101</td>
<td>29</td>
<td>10111</td>
</tr>
<tr>
<td>06</td>
<td>01100</td>
<td>14</td>
<td>01110</td>
<td>22</td>
<td>01101</td>
<td>30</td>
<td>01111</td>
</tr>
<tr>
<td>07</td>
<td>11100</td>
<td>15</td>
<td>11110</td>
<td>23</td>
<td>11101</td>
<td>31</td>
<td>11111</td>
</tr>
<tr>
<td>08</td>
<td>00010</td>
<td>16</td>
<td>00001</td>
<td>24</td>
<td>00011</td>
<td>32</td>
<td>*</td>
</tr>
</tbody>
</table>
7. Networking Wiring

(1) All control panels need binary dip switch number, so please set up the dip switch in the control panel and another control panel from No. 1 to No. 32.

Example: Panel No. 1

“ON” position is “1” and numeric is “0”. For example, the first control panel is 10000, the second panel is 01000 and so on. Control panel number’s corresponding dip switch is as below.

<table>
<thead>
<tr>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
<th>Panel No.</th>
<th>DIP switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>10000</td>
<td>09</td>
<td>10010</td>
<td>17</td>
<td>10001</td>
<td>25</td>
<td>10011</td>
</tr>
<tr>
<td>02</td>
<td>01000</td>
<td>10</td>
<td>01010</td>
<td>18</td>
<td>01001</td>
<td>26</td>
<td>01011</td>
</tr>
<tr>
<td>03</td>
<td>11000</td>
<td>11</td>
<td>11010</td>
<td>19</td>
<td>11001</td>
<td>27</td>
<td>11011</td>
</tr>
<tr>
<td>04</td>
<td>00100</td>
<td>12</td>
<td>00110</td>
<td>20</td>
<td>00101</td>
<td>28</td>
<td>00111</td>
</tr>
<tr>
<td>05</td>
<td>10100</td>
<td>13</td>
<td>10110</td>
<td>21</td>
<td>10101</td>
<td>29</td>
<td>10111</td>
</tr>
<tr>
<td>06</td>
<td>01100</td>
<td>14</td>
<td>01110</td>
<td>22</td>
<td>01101</td>
<td>30</td>
<td>01111</td>
</tr>
<tr>
<td>07</td>
<td>11100</td>
<td>15</td>
<td>11110</td>
<td>23</td>
<td>11101</td>
<td>31</td>
<td>11111</td>
</tr>
<tr>
<td>08</td>
<td>00010</td>
<td>16</td>
<td>00001</td>
<td>24</td>
<td>00011</td>
<td>32</td>
<td>*</td>
</tr>
</tbody>
</table>

(2) DIP switch settings
QA16 control panels: Please adjust the switch to “2”.

Rotary Dip Switch on PCB No. 05316-2D

Binary Dip Switch on PCB No. 05316-2D
(3) Signal contacts:
   Connect QA16 control panel’s “S+” to another control panel’s “S”
   Connect QA16 control panel’s “S-” to another control panel’s “SC”
8. Addressable Point Number Setting

Please set up the binary dip switch of modules (QA17-B, QA17-K), addressable detectors (QA01, QA05, QA06) and manual call points (QA19, QA0817) from No. 1 to No. 250.

Example: Device No. 1

“ON” position is “1” and numeric is “0”. For example, the first device number is 10000000, the second device is 01000000 and so on. Device number’s corresponding dip switch is as below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>10000000</td>
<td>51</td>
<td>11001100</td>
<td>101</td>
<td>10100110</td>
<td>151</td>
<td>11101001</td>
<td>201</td>
<td>10010011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>01000000</td>
<td>52</td>
<td>00101100</td>
<td>102</td>
<td>01100110</td>
<td>152</td>
<td>00011001</td>
<td>202</td>
<td>01010011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>11000000</td>
<td>53</td>
<td>10101100</td>
<td>103</td>
<td>11101010</td>
<td>153</td>
<td>10011001</td>
<td>203</td>
<td>11010011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>00100000</td>
<td>54</td>
<td>01011010</td>
<td>104</td>
<td>00010110</td>
<td>154</td>
<td>01011001</td>
<td>204</td>
<td>00110011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>10100000</td>
<td>55</td>
<td>11101100</td>
<td>105</td>
<td>10010110</td>
<td>155</td>
<td>11011001</td>
<td>205</td>
<td>10110011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>01100000</td>
<td>56</td>
<td>00111000</td>
<td>106</td>
<td>01010110</td>
<td>156</td>
<td>00111001</td>
<td>206</td>
<td>01110011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>11100000</td>
<td>57</td>
<td>10110110</td>
<td>107</td>
<td>11011010</td>
<td>157</td>
<td>10111001</td>
<td>207</td>
<td>11110011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>00010000</td>
<td>58</td>
<td>01011110</td>
<td>108</td>
<td>00110110</td>
<td>158</td>
<td>01111001</td>
<td>208</td>
<td>00010011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>10010000</td>
<td>59</td>
<td>11011110</td>
<td>109</td>
<td>10110110</td>
<td>159</td>
<td>11111001</td>
<td>209</td>
<td>10001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>01010000</td>
<td>60</td>
<td>00111110</td>
<td>110</td>
<td>01110110</td>
<td>160</td>
<td>00001011</td>
<td>210</td>
<td>01001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>11010000</td>
<td>61</td>
<td>10111110</td>
<td>111</td>
<td>11110110</td>
<td>161</td>
<td>10000101</td>
<td>211</td>
<td>11001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>00110000</td>
<td>62</td>
<td>01111110</td>
<td>112</td>
<td>00001110</td>
<td>162</td>
<td>01000101</td>
<td>212</td>
<td>00101011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>10110000</td>
<td>63</td>
<td>11111110</td>
<td>113</td>
<td>10001110</td>
<td>163</td>
<td>11000101</td>
<td>213</td>
<td>10101011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>01110000</td>
<td>64</td>
<td>00000110</td>
<td>114</td>
<td>01001110</td>
<td>164</td>
<td>00100101</td>
<td>214</td>
<td>01010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>11110000</td>
<td>65</td>
<td>10000010</td>
<td>115</td>
<td>11001110</td>
<td>165</td>
<td>10100101</td>
<td>215</td>
<td>11101011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>00001000</td>
<td>66</td>
<td>01000010</td>
<td>116</td>
<td>00101110</td>
<td>166</td>
<td>01001011</td>
<td>216</td>
<td>00010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>10001000</td>
<td>67</td>
<td>11000010</td>
<td>117</td>
<td>10101110</td>
<td>167</td>
<td>11100101</td>
<td>217</td>
<td>10011011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>01001000</td>
<td>68</td>
<td>00100001</td>
<td>118</td>
<td>01101110</td>
<td>168</td>
<td>00010101</td>
<td>218</td>
<td>01011011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>11001000</td>
<td>69</td>
<td>10100010</td>
<td>119</td>
<td>11101110</td>
<td>169</td>
<td>10010101</td>
<td>219</td>
<td>11101011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>00101000</td>
<td>70</td>
<td>01101000</td>
<td>120</td>
<td>00011110</td>
<td>170</td>
<td>01010101</td>
<td>220</td>
<td>00111011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>10101000</td>
<td>71</td>
<td>11100010</td>
<td>121</td>
<td>10011110</td>
<td>171</td>
<td>11010101</td>
<td>221</td>
<td>10111011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>01101000</td>
<td>72</td>
<td>00010100</td>
<td>122</td>
<td>01011110</td>
<td>172</td>
<td>00110101</td>
<td>222</td>
<td>01111011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>11101000</td>
<td>73</td>
<td>10010100</td>
<td>123</td>
<td>11011110</td>
<td>173</td>
<td>10110101</td>
<td>223</td>
<td>11111011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>00011000</td>
<td>74</td>
<td>01010100</td>
<td>124</td>
<td>00111110</td>
<td>174</td>
<td>01110101</td>
<td>224</td>
<td>00001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>10011000</td>
<td>75</td>
<td>11010010</td>
<td>125</td>
<td>10111110</td>
<td>175</td>
<td>11110101</td>
<td>225</td>
<td>10001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>01011000</td>
<td>76</td>
<td>00110010</td>
<td>126</td>
<td>01111110</td>
<td>176</td>
<td>00001101</td>
<td>226</td>
<td>01001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>11011000</td>
<td>77</td>
<td>10110010</td>
<td>127</td>
<td>11111110</td>
<td>177</td>
<td>10001101</td>
<td>227</td>
<td>11001011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>00111000</td>
<td>78</td>
<td>01110010</td>
<td>128</td>
<td>00000001</td>
<td>178</td>
<td>01001101</td>
<td>228</td>
<td>00100111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>10111000</td>
<td>79</td>
<td>11110010</td>
<td>129</td>
<td>10000001</td>
<td>179</td>
<td>11001101</td>
<td>229</td>
<td>10101111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>01111000</td>
<td>80</td>
<td>00001010</td>
<td>130</td>
<td>01000001</td>
<td>180</td>
<td>00101101</td>
<td>230</td>
<td>01100111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>11111000</td>
<td>81</td>
<td>10001010</td>
<td>131</td>
<td>11000001</td>
<td>181</td>
<td>10101101</td>
<td>231</td>
<td>11100111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>00000100</td>
<td>82</td>
<td>01001010</td>
<td>132</td>
<td>00100001</td>
<td>182</td>
<td>01101101</td>
<td>232</td>
<td>00010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>10000100</td>
<td>83</td>
<td>11001010</td>
<td>133</td>
<td>10100001</td>
<td>183</td>
<td>11101101</td>
<td>233</td>
<td>10010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>01000100</td>
<td>84</td>
<td>00101010</td>
<td>134</td>
<td>01100001</td>
<td>184</td>
<td>00111101</td>
<td>234</td>
<td>01010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>11000100</td>
<td>85</td>
<td>10101010</td>
<td>135</td>
<td>11100001</td>
<td>185</td>
<td>10011101</td>
<td>235</td>
<td>11010111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>00100100</td>
<td>86</td>
<td>01101010</td>
<td>136</td>
<td>00100001</td>
<td>186</td>
<td>01011101</td>
<td>236</td>
<td>00110111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>10100100</td>
<td>87</td>
<td>11101010</td>
<td>137</td>
<td>10010001</td>
<td>187</td>
<td>11011101</td>
<td>237</td>
<td>10110111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>01100100</td>
<td>88</td>
<td>00110101</td>
<td>138</td>
<td>01100001</td>
<td>188</td>
<td>00111101</td>
<td>238</td>
<td>01110111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>11100100</td>
<td>89</td>
<td>10011010</td>
<td>139</td>
<td>11010001</td>
<td>189</td>
<td>10111101</td>
<td>239</td>
<td>11110111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>00010100</td>
<td>90</td>
<td>01011010</td>
<td>140</td>
<td>00110001</td>
<td>190</td>
<td>01111101</td>
<td>240</td>
<td>00001111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>10010100</td>
<td>91</td>
<td>11011010</td>
<td>141</td>
<td>10110001</td>
<td>191</td>
<td>11111101</td>
<td>241</td>
<td>10001111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>01010100</td>
<td>92</td>
<td>00111010</td>
<td>142</td>
<td>01110001</td>
<td>192</td>
<td>00000011</td>
<td>242</td>
<td>01001111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>11010100</td>
<td>93</td>
<td>10111010</td>
<td>143</td>
<td>11110001</td>
<td>193</td>
<td>10000011</td>
<td>243</td>
<td>11001111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>00111010</td>
<td>94</td>
<td>01111010</td>
<td>144</td>
<td>00010001</td>
<td>194</td>
<td>01000011</td>
<td>244</td>
<td>00101111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>10110100</td>
<td>95</td>
<td>11111010</td>
<td>145</td>
<td>10010001</td>
<td>195</td>
<td>11000011</td>
<td>245</td>
<td>10101111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>01110100</td>
<td>96</td>
<td>00001110</td>
<td>146</td>
<td>01001001</td>
<td>196</td>
<td>00100011</td>
<td>246</td>
<td>01101111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>11110100</td>
<td>97</td>
<td>10000110</td>
<td>147</td>
<td>11001001</td>
<td>197</td>
<td>10100011</td>
<td>247</td>
<td>11101111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>00011100</td>
<td>98</td>
<td>01001110</td>
<td>148</td>
<td>01010001</td>
<td>198</td>
<td>01100011</td>
<td>248</td>
<td>00011111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>10011100</td>
<td>99</td>
<td>11000110</td>
<td>149</td>
<td>11101001</td>
<td>199</td>
<td>11100011</td>
<td>249</td>
<td>10011111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>01001100</td>
<td>100</td>
<td>00100110</td>
<td>150</td>
<td>01110010</td>
<td>200</td>
<td>00010011</td>
<td>250</td>
<td>01011111</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>