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INTRODUCTION

The Nemtek FG7 platform is a platform used for providing a graphical interface and connectivity to a network of Nemtek Energizers and Input/Output Cards (IO Cards).

The platform may be configured with different internal printed circuit boards, and software, to provide the required functionality.

**Warning:**
Test the functionality of the system after configuration and before commissioning.

OPENING THE FG7B

On the opposite side to the LCD display are two screws that need to be removed. With the LCD facing you, slide the LCD gently to one side by approximately 15mm.

Leverage the LCD out as shown in the picture.

A green printed circuit board IOT1601 JM and a dark blue control unit are inside the unit.
The IOT1601 JM board is responsible for generating the different supply voltages. The input voltage is 12Vdc and is polarity protected. The board also monitors and processes the different communication signals before sending the information to the control unit.

You will find jumpers, connectors, and LEDs on the board for selecting, connecting, and indicating. The control unit hosts the software and has all communication ports on board.
**JUMPER SETTINGS**

Jumper setting as viewed with terminals at the bottom.

<table>
<thead>
<tr>
<th>Jumper Setting</th>
<th>Jumper Setting as Viewed</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTL Serial</td>
<td>JP7 (2)</td>
<td>To the left if serial TTL is selected (For Nemlink communication)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To the right if RS 485 or RS 232 communication is required</td>
</tr>
<tr>
<td>RS485/RS232</td>
<td>JP8 (2)</td>
<td>To the left for RS 485 communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To the right for RS 232 communication</td>
</tr>
<tr>
<td>RS485out</td>
<td>JP3 (1)</td>
<td>Down to enable RS 485 transmitting (standard)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to disable RS 485 transmitting (nonstandard use)</td>
</tr>
<tr>
<td>RS485in</td>
<td>JP2 (1)</td>
<td>Up to enable RS485 receiving (standard)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Down to disable RS485 receiving (nonstandard use)</td>
</tr>
<tr>
<td>Line Bias</td>
<td>JP1 (2)</td>
<td>Up to have line bias (star configurations)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Down for no line bias (daisy chain configuration)</td>
</tr>
<tr>
<td>Watch Dog timer 1</td>
<td>JP6 (1)</td>
<td>Down for auto reset with transmission failure of the control unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up for no auto reset of the control unit</td>
</tr>
<tr>
<td>Watch Dog timer 2</td>
<td>JP4 (1)</td>
<td>Down for auto reset of the power supply with transmission failure of the control unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up for no auto reset of the power supply</td>
</tr>
</tbody>
</table>

**CONNECTORS**

The connectors on the IOT1601JM board are self-explanatory. However, if communication will be made through a NemLink card, then the connector J7 should be used with the comms cable supplied with the unit (jumper selection TTL Serial). Also note that the FG7-Druid does not support RS485 multidrop, only daisy chain – so there is a RS485 OUT and a RS485 IN terminal. The TAUT Wire terminal is not used in the FG7-Druid controller.

**PUSH BUTTONS**

There are two push buttons on the green board. The one is marked "B3 PWR" (Power) and the other "B3 RESET". The B3 PWR button is used to manually power the control unit on and off, this is usually required when programming the settings on the FG7-Druid. The B3 RESET button is used to manually reset the FG7-Druid Controller.
**FG7B CONTROLLER:  **

**Hardware**

**LEDS**

There are 8 LEDs on the green board.

LED9 – If flashing, indicates transmission of data from the control unit to TTL SERIAL/RS232/485
LED8 – If flashing, indicates that the control unit is receiving data from TTL SERIAL/RS232/485
LED7 – Not used in FG7-Druid
LED6 – Not used in FG7-Druid
LED5 – When on, indicates control board heartbeat
LED4 – When flashing, indicates that the watchdog timer is operational
LED3 – 5V supply indicator
LED2 – 3.3V supply indicator

The control unit hosts the software and gives outputs via the touch screen, HDMI, Ethernet or USB port. All other ports should not be used by the installer.

**USB PORT**

The USB port is used for upgrading software, uploading site images, downloading logs and can also be used for a mouse, so that a pointer can be used on the touch screen display.

**HDMI PORT**

The HDMI port is a standard micro-HDMI connector. To activate the HDMI port a shell script has to be loaded (contact distributor for details) and the touchscreen ribbon cable has to be disconnected from connector LCD1 (brown ribbon cable). A USB mouse should be used for operating the system when using an HDMI display.

**ETHERNET PORT**

The Ethernet port is used for communication with a computer with Druid FenceProbe or third party software.

Note:
The control unit hosts the software and gives outputs via the touch screen, HDMI, Ethernet or USB port. All other ports should not be used by the installer.

**TOUCHSCREEN**

The touchscreen is the standard display used on the stand-alone units, without Druid FenceProbe or third party software.
PROGRAMMING THE FG7B-DRUID

The FG7B-Druid should be programmed with the number of energizers as well as the IO cards in the system.
If required a graphic site image can be loaded on the FG7B-Druid and zones (sectors) as well as Gate lines can be drawn on the image.

CONFIGURE THE NUMBER OF ENERGIZERS ON THE NETWORK

1) On the FG7, press the PIN tab on the top screen and select ▼ Installer, enter the appropriate PIN number and press Enter. Check that Installer stays on the screen and has not revert back to select.
2) Press the System tab on the top of the screen and use the ▼ and ▲ markers next to the number of energizers to select the correct number of energizers in the network. Press Save No of Energizers.
3) If jumper 4 and 6 are set to auto reset (normal operation), then after about two minutes the application will restart. Otherwise one can push the B3-PWR button and this will close the application and after the Nemtek logo has disappeared from the screen you press the B3-PWR button again to restart the unit.
4) Check under the system tab that the number of energizers is now correct.

CONFIGURE THE NUMBER OF IO CARDS ON THE NETWORK

1) On the FG7, press the PIN tab on the top screen and select ▼ Installer, enter the appropriate PIN number and press enter. Check that Installer stays on the screen and has not revert back to select.
2) Press the System tab on the top of the screen and use the ▼ and ▲ markers next to the number of IO cards to select the correct number of IO cards in the network. Press Save No of IO cards.
3) If jumper 4 and 6 are set to auto reset (normal operation), then after about two minutes the application will restart. Otherwise one can push the B3-PWR button and this will close the application and after the Nemtek logo has disappeared from the screen you press the B3-PWR button again to restart the unit.
4) Check under the system tab that the number of IO cards is now correct.
FG7B CONTROLLER: Programming the FG7B

**Note 1:**
1. IO Card addresses are to start at #33 and must be sequential.
2. Removing a jumper increments the address by the number screen-printed on the pcb. This address is added to an offset of 33. Example 1. If none of the 16/8/4/2/1 jumpers are removed then the card will have a net address of 33. Example 2. If jumper 1 of the 16/8/4/2/1 jumpers is removed then the IO card will have a net address of 34. Example 3. If jumper 2 of the 16/8/4/2/1 jumpers is removed then the IO card will have a net address of 35 etc.

**Note 2:**
- The FG7 scans through the network address at a rate of twenty addresses per second. The fewer the addresses utilised on the system, the faster the system response. Because an energizer only updates its own parameters once a second, there is little point in updating the FG7 display faster than that. A combination of twenty addresses on a FG7 network bus gives the optimal performance in terms of speed versus hardware utilization.
- The number of IO Cards used on the system can vary from zero to a maximum of 31.
- More than one energizer can be mapped to a single IO card. Example. One IO Card can be mapped to 19 Energizers. A Fence 1 alarm, from any energizer, can be mapped to one of the five relays on the IO card. This is useful for electrical contactors and lighting etc.
- Only five conditions per energizer can be mapped to a relay. (Use computer network to get full access to all the information.)
- Only the Installer can manually toggle the relay outputs.
USER TAB SETTINGS

Under the user tab are several buttons for setting:
- Installer and User PIN numbers (see user manual)
- Time (see user manual)
- Saving the Log (see user manual)
- Defaulting to factory settings

FACTORY DEFAULT

Under the USER Tab you can reset the FG7 to Factory default settings by pressing the default button the IP address will be reset to 10.0.0.20 and all pin settings will default back to the numbers as stated in the user manual.

SYSTEM TAB SETTINGS

Under the system tab there are a number of settings which can be selected by clicking on the setting required and the tick box next to the setting will then show a tick indicating that the setting is selected. The following settings can be selected:
- Audible alarm
- Alarm Sensor mode
- Show sync loss
- Nemlink
- Proxy
- AbsoluteIO
- Failsafe    Off    LV

AUDIBLE ALARM

The buzzer inside the FG7 is enabled when the Audible Alarm tick box is ticked. The buzzer will sound when there is an alarm or service condition. If unticked the buzzer is disabled.

ALARM SENSOR MODE

If the alarm sensor mode is ticked then alarm and service conditions will only show as long as the alarm or service condition is present. When the error clears the screen will show a good condition again. If Audible alarm is ticked the buzzer will sound but will require a manual energizer reset from the global screen.

SHOW SYNC LOSS

When ticked the FG7 will alarm, log and show under service that synchronization between energizers in the system has been lost.
NEMLINK

This feature should be ticked if communication goes via Ethernet or if radio frequency/microwaves links are used in the system. They may show comms failures due to time delays in the links. By ticking Nemlink a longer time is available before the comms alarm is triggered.

PROXY

If the FG7 is used as a proxy controller for third party software or computer application and you do not want to display the site image on the screen of the FG7 then select proxy under the tab screen. When ticked the default screen will only show the IP address of the FG7 and the software version of the unit. There is also a tick box indicating that 3th party comms is taking place, the tick in the tick box will flash at half the integration frequency.

AbsoluteIO

When AbsoluteIO is not ticked the control of the mapped energizer(s) is either by the User of the FG7 or the input on the IO card. The last command from the User or from the IO card dictates the system state.

When AbsoluteIO is ticked the control of the mapped energizer(s) is taken away from the User of the FG7 and is now given to the input of the IO card. The only way to now give commands to the energizer(s) from the FG7 screen is to first untick AbsoluteIO on the system tab.

FAILSAFE

When third party software or Nemtek FenceProbe is used and the connection between the application and the FG7 is lost then the FG7 will automatically reset to enable the application to reconnect. If Failsafe is not ticked than after the reset the energizer will come On in High Voltage mode, by ticking Failsafe and selecting Off and/or LV the energizers will after reset be Off and in Low or High voltage mode as selected. If Failsafe is ticked and Off is not ticked but with LV ticked the energizers will come On in Low voltage mode after the reset.

Please note that if failsafe is ticked the internal mapping files are disabled.

LOADING A GRAPHIC SITE IMAGE

1) Load nemshell7BImage on an USB stick (nemshell7BImage is available from Nemtek or its distributors)
2) Get a suitable image of your site and scale the image to about 370 x 370 pixels. Save the image in a png format and call it image.
3) Load the image on the USB stick.
4) If you can access the USB port without removing the unit from its base than start the unit otherwise remove the unit from its base for access to the USB port and then start the unit.
5) Go to the PIN tab and select Installer, enter the Installer code and press enter. Make sure it stays on Installer and does not go back to select
6) Place the USB stick in the USB port on the control board.
7) Go to the System tab and press firmware upgrade (the screen will go black and says system login).
8) If jumper 4 and 6 are set to auto reset (normal operation), then after about two minutes the application will restart. Otherwise one can push the B3-PWR button and this will close the application and after the Nemtek logo has disappeared from the screen you press the B3-PWR button again to restart the unit.

9) Remove the stick and place the unit back in its base.

**DRAWING THE ZONES AND GATES LINES**

1) On the FG7B, press the PIN tab on the top screen and Select ▼ Installer. Enter the appropriate PIN number and press Enter. Check that Installer stays on the screen and has no revert back to Select.

2) Press the Image tab on the top of the screen.

3) Use the ▼ and ▲ keys under Energ# symbol to select the desired energizer.

4) Use the ▼ and ▲ keys under Zone# symbol to select the desired zone.

5) Press “Start” and touch the screen at the desired points corresponding to that sector. Once the last point is reached press “Stop”. A maximum of eight points is permissible. Press “View” to see what your sector looks like. If unhappy with the result simply press “Start” and repeat the procedure.

Please note that a USB mouse can be used to assist with drawing the lines.

6) A Gate can be associated with each energizer, but only has two points. Press “Gstrt” and touch the screen at the start point and end point of the gate. Press “View” to confirm your entry.

7) You can randomly do all energizers, zones and gates using steps 3 to 6 above.

8) When you are happy with the zone and gate lines press “Save”.

9) The system will automatically load this graphic layout on power-up. You may after entering Installer mode, edit any sector independently and then re-save.

10) The labels E1:Z1 (Energizer Address, Zone number) and E1:Z2 etc. are placed automatically at the start of each fence sector.

**SETTING THE IP ADDRESS**

1) On the FG7, press the PIN tab on the top screen and select ▼ Installer, enter the appropriate PIN number and press enter. Check that Installer stays on the screen and has not revert back to select.

2) Press the System tab on the top of the screen and use the ▼ and ▲ markers next to the address boxes to set the correct IP address, Network Mask and Gateway address.

3) Press the Set IP Address button on the bottom of the screen and the new IP address will be programmed into the FG7.

4) To ensure that the setting is correct ping the new IP address from a computer.

**LCD CALIBRATION**

The touch screen display can be calibrated, this will be necessary if the screen is replaced or if it is difficult to touch the buttons on the screen. If the touch position on the screen is too far out to touch the LCD calibration button a USB mouse can also be used to recalibrate the screen otherwise a pen can be used.

1) On the FG7, press the PIN tab on the top screen and select ▼ Installer, enter the appropriate PIN number and press enter. Check that Installer stays on the screen and has not revert back to select.
2) Press the system tab on the top of the screen and press the LCD calibration button. The Nemtek screen should appear followed by the calibration screen.

3) Touch the crosshair and a second crosshair will appear. Touch the second crosshair.

4) Carry one until all five crosshair markers are done. The unit will then automatically reboot with the new calibration.

**MAPPING ENERGIZER ALARM(S) TO IO CARD**

A text file, etoimapplus.txt, i.e. energizer to io card mapping file is used to map each energizer address to a relay card address.

This file can be made in notepad and has to be uploaded to the FG7B with the procedure for loading mapping files.

The notation used is that Energizer #4 corresponds to Energizer with address 4.

**Table 1: How the etoimapplus.txt file is structured**

<table>
<thead>
<tr>
<th>Line Number</th>
<th>Function associated with the line</th>
<th>Lines of etoimap.txt file</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The IO Card Address that Energizer#1 will communicate with</td>
<td>33</td>
<td>Energizer#1 alarms via IO Card 33</td>
</tr>
<tr>
<td>2</td>
<td>The combination of any alarm condition(note 1) that will activate relay 1</td>
<td>2</td>
<td>Only Fence 1 Alarm activates relay 1</td>
</tr>
<tr>
<td>3</td>
<td>The combination of any alarm condition(note 1) that will activate relay 2</td>
<td>6</td>
<td>Fence 1 or Fence 2 alarm activates relay 2 (2+4)</td>
</tr>
<tr>
<td>4</td>
<td>The combination of any alarm condition(note 1) that will activate relay 3</td>
<td>14</td>
<td>Fence 1 or Fence 2 or Gate Alarm activates relay 3 (2+4+8)</td>
</tr>
<tr>
<td>5</td>
<td>The combination of any alarm condition(note 1) that will activate relay 4</td>
<td>32</td>
<td>Only Tamper Alarm activates relay 4</td>
</tr>
<tr>
<td>6</td>
<td>The combination of any alarm condition(note 1) that will activate relay 5</td>
<td>4</td>
<td>Only Fence 2 Alarm activates relay 5</td>
</tr>
<tr>
<td>7</td>
<td>The combination of any alarm condition(note 1) that will activate relay 6</td>
<td>2048</td>
<td>Mains present activates relay 6</td>
</tr>
<tr>
<td>8</td>
<td>The combination of any alarm condition(note 1) that will activate relay 7</td>
<td>65</td>
<td>Comms fail or Sync fail activates relay 7 (1+64)</td>
</tr>
<tr>
<td>9</td>
<td>The combination of any alarm condition(note 1) that will activate relay 8</td>
<td>4096</td>
<td>Panic alarm activates relay 8</td>
</tr>
<tr>
<td>10</td>
<td>Latching or not latching of relays with alarm condition</td>
<td>38</td>
<td>Fence 1, Fence 2 and Tamper Alarm conditions are not latched (2+4+32)</td>
</tr>
<tr>
<td>11</td>
<td>The IO Card Address that Energizer#2 will communicate with</td>
<td>34</td>
<td>Energizer#1 alarms via IO Card 34</td>
</tr>
<tr>
<td>12</td>
<td>The above sequence repeated etc. etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Notes:

1) Table 2 has a number associated with each alarm condition on an energizer. Select the desired alarm condition(s) that can activate any relay and add the numbers together.

2) If the relay must only be activated as long as the alarm condition persists (not latching) then select the energizer condition in table 2 and add the number together for all the relays which must not latch. Zero implies everything is latching and an alarm condition must be reset manually after an alarm occurs.

3) There are two types of IO card available: one with 5 programmable relays and one with 8 programmable relays. If the one with 5 relays is used then line 7, 8, and 9 can be made 0.

Table 2: How the numbers are associated with each alarm state

<table>
<thead>
<tr>
<th>Energizer State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMS FAIL</td>
<td>1</td>
</tr>
<tr>
<td>FENCE 1 ALARM</td>
<td>2</td>
</tr>
<tr>
<td>FENCE 2 ALARM</td>
<td>4</td>
</tr>
<tr>
<td>GATE ALARM</td>
<td>8</td>
</tr>
<tr>
<td>SERVICE ALARM</td>
<td>16</td>
</tr>
<tr>
<td>TAMPER ALARM</td>
<td>32</td>
</tr>
<tr>
<td>SYNC FAILURE</td>
<td>64</td>
</tr>
<tr>
<td>ZONE 1 ON</td>
<td>128</td>
</tr>
<tr>
<td>ZONE 1 HIGH VOLTAGE</td>
<td>256</td>
</tr>
<tr>
<td>ZONE 2 ON</td>
<td>512</td>
</tr>
<tr>
<td>ZONE 2 HIGH VOLTAGE</td>
<td>1024</td>
</tr>
<tr>
<td>MAINS PRESENT</td>
<td>2048</td>
</tr>
<tr>
<td>PANIC ALARM</td>
<td>4096</td>
</tr>
</tbody>
</table>

Multiple energizers addresses can communicate with single IO card addresses i.e. a fence alarm on Zone 1 of any energizer could turn on a specific relay of one particular IO card and control perimeter lighting. In this case line 8 in Table 1 would have a 33. Both Energizer#1 and Energizer#2 would communicate with IO card #33. The choice of relay number and energizer condition(s) is totally arbitrary. Not all the relays have to be configured.
MAPPING NEMTEK IO CARDS TO ENERGIZER(S)

Inputs on a Nemtek IO card may be used to control a specific energizer or all i.e. global energizers on a network. A text file, itoemap.txt, i.e. io card to energizer mapping file, is used to map each IO card address to an energizer. This file can be made in notepad and has to be uploaded to the FG7B with the procedure for loading mapping files.

**TABLE 3: How the itoemap.txt file is structured**

<table>
<thead>
<tr>
<th>Line Number</th>
<th>Function Associated with the line</th>
<th>Lines of itoe.txt file</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The energizer address that IO card#33 will communicate with (unless global)</td>
<td>1</td>
<td>Input 1 from IO card#33 will turn On/Off Zone 1. Input 2 will turn On/Off Zone 2 of energizer#1 (1+2+128)</td>
</tr>
<tr>
<td>2</td>
<td>Energizer specific inputs from this IO card (note 3 and 5)</td>
<td>131</td>
<td>Input 5 from IO card#33 will turn On/Off all energizers. Input 6 will turn all energizer in HV/LV mode (16+32+128)</td>
</tr>
<tr>
<td>3</td>
<td>Global Energizer inputs from this IO card (note 3 and 5)</td>
<td>176</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Inputs that are valid on this IO card (note 4)</td>
<td>51</td>
<td>Inputs 1,2,5 and 6 are used (1+2+16+32)</td>
</tr>
<tr>
<td>5</td>
<td>The Energizer Address that IO card#34 will communicate with (unless global)</td>
<td>2</td>
<td>Energizer#2</td>
</tr>
<tr>
<td>6</td>
<td>The above sequence repeated etc. etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

4) Table 4 has a number associated with each IO card input.
5) Select the appropriate numbers and add them for the inputs to be recognized. If the number is set to 0 the all inputs are ignored.
6) This number must be added when using either a Selective energizer control or Global energizer control in rows 2 and 3 of Table 3. I.e. if the total number is less than 128 for a given row, then that particular row will be ignored.
7) Global inputs and specific inputs cannot be used on the same IO card so either line 2 or line 3 should be zero.

**Warning**

1) If multiple IO Cards are used, with multiple identical global inputs enabled you could end up with energizers turning On and Off every second. If the one global input dictates that all energizers should be On and the other global input on another IO card dictates that all energizers should be Off, you will have a non-functioning network.
**TABLE 4:** How the numbers relate to the IO Card Inputs

<table>
<thead>
<tr>
<th>INPUT</th>
<th>INPUT FUNCTION</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input 1</td>
<td>ZONE 1 ON/OFF</td>
<td>1</td>
</tr>
<tr>
<td>Input 2</td>
<td>ZONE 2 ON/OFF</td>
<td>2</td>
</tr>
<tr>
<td>Input 3</td>
<td>ZONE 1 HIGH/LOW VOLTAGE</td>
<td>4</td>
</tr>
<tr>
<td>Input 4</td>
<td>ZONE 2 HIGH/LOW VOLTAGE</td>
<td>8</td>
</tr>
<tr>
<td>Input 5</td>
<td>GLOBAL ON/OFF</td>
<td>16</td>
</tr>
<tr>
<td>Input 6</td>
<td>GLOBAL HIGH/LOW VOLTAGE</td>
<td>32</td>
</tr>
<tr>
<td>ADD</td>
<td>SEE NOTE 5</td>
<td>128</td>
</tr>
<tr>
<td>Input 7</td>
<td>Can only be utilized through application software</td>
<td></td>
</tr>
<tr>
<td>Input 8</td>
<td>Can only be utilized through application software</td>
<td></td>
</tr>
</tbody>
</table>

**LOADING A MAPPING FILE**

The mapping files can be loaded on the FG7 with a USB stick as described below or through the web interface (see the FG7 web interface)

**Requirements:**
Flash drive loaded with nemshell7BText1.sh and with folder NemText
Inside folder NemText place etoimapplus.txt and/or itoemap.txt (these two files should be made in Notepad)

**Procedure:**
1) Connect power to the FG7 unit.
2) Place the flash drive in the USB connector of the FG7 unit (make sure there is only one nemshell on the flash drive)
3) On the top of the screen go to PIN and enter installer pin
4) Go to the system tab.
5) Press firmware upgrade
6) Press the PWR button on the FG7. Wait until the Nemtek logo has disappeared and the screen has gone black.
7) Press the PWR button on the FG7
8) Wait until the Display has come back on then remove the Flash drive.

Please note that if failsafe is ticked the mapping files are disabled.
FIRMWARE UPGRADE

1) Load on a USB stick the latest available software for the FG7B control unit. The file normally is called nemtekfg7BDroid?? where ?? normally is a number indicating the version. The latest version will be available from Nemtek or its distributors.

2) If you can access the USB port without removing the unit from its base than start the unit otherwise remove the unit from its base for access to the USB port and then start the unit.

3) Go to the PIN tab and select Installer, enter the Installer code and press enter. Make sure it stays on Installer and does not go back to Select.

4) Place the USB stick in the USB port on the control board.

5) Go to the System tab and check the version number and then press firmware upgrade (the screen will go black and says system login).

6) If jumper 4 and 6 are set to auto reset (normal operation), then after about two minutes the application will restart. Otherwise one can push the B3-PWR button and this will close the application and after the Nemtek logo has disappeared from the screen you press the B3-PWR button again to restart the unit.

7) Go back to the System tab and check that the new version has been loaded.

8) Remove the stick and place the unit back in its base.

THE FG7 WEB INTERFACE

The FG7 has a web interface which can be used for:

1) Viewing mapping files loaded in the FG7
2) Uploading new mapping files
3) Uploading new site images
4) Switching between LCD touchscreen and HDMI display
5) Uploading new program files

To use the web interface you will need the IP address of the control unit in the FG7 which is displayed under the NET tab in the FG7 as well as the installer password and a computer set to the correct IP range for the IP address of the control unit.

Connecting to the web interface

1) Open the FG7 and connect a network cable from the computer to the network connector on the control board inside the FG7.

2) Open the internet browser on the computer and enter on the address bar the IP address which is displayed under the NET tab of the FG7 (make sure the that the computers IP range is suitable for this IP address)

3) The FG7 configuration screen should now show on the computer
Viewing of mapping files

You can view the mapping files which are present in the FG7 by entering on the address bar in the browser the IP address followed by /itoemap.txt or /etoimapplus.txt depending on which file is required.

As an example with the IP address of the control unit being 10.0.0.20 one would enter in the browser 10.0.0.20/itoemap.txt or alternatively 10.0.0.20/etoimapplus.txt

The requested map will appear on the computer screen. Please note one cannot change the mapping here you would have to upload a new mapping file if so required.

Loading of files

To load files through the web browser enter on the address bar in the browser the IP address followed by /nemupload.cgi.

As an example with the IP address of the control unit being 10.0.0.20 one would enter in the browser 10.0.0.20/nemupload.cgi

The FG7 installer configuration screen will appear on the computer screen.

1) Enter the installer password and a new screen will appear
2) Under select a file use the browse button to find the required file on the computer. Be aware that not always all files are shown, to see all files select the custom tab on the bottom right of the screen and then select all files.
   You can only load guf5e files for firmware updates, image13r370.png files for site images and the mapping files itoemap.txt or etoimapplus.txt
3) Once the file is selected you have two options:
   Press “Get File” and re-enter the installer password and the selected file will be down loaded into the FG7 or
   Click on “View File Only” and press “Get File”. In this case the file chosen will be displayed on the computer screen but not downloaded to the FG7. If you are satisfied with the file, press the back button on your browser un-tick the “View File Only” and press the “Get File”. Enter the installer password and the file will be uploaded to the FG7.
4) After the file is loaded one has to reset the FG7 and this can be accomplished by pressing “Reset FG7 and Use Files”. The FG7 will reset and after restarting ready for use. Do not remove the supply from the FG7 for at least a minute after the unit restarted.

LCD touchscreen or HDMI

Through the web browser one can change the LCD touchscreen display to an HDMI display or vice versa.

1) Enter on the address bar of the browser after the IP address /nemupload.cgi.
   As an example with the IP address of the control unit being 10.0.0.20 one would enter in the browser 10.0.0.20/nemupload.cgi
2) Enter the installer password
   The installer configuration screen will appear.
3) Click on HDMI or LCD screen as required. The display will change to HDMI or LCD touchscreen.
THIRD PARTY INTEGRATION

The FG7 can communicate with third party software such as Nemtek Druid FenceProbe. The communication is done through the Ethernet port on the blue control board of the FG7. The IP of the computer running the software should be in the same range as the IP of the FG7 (the IP of the FG7 can be changed under the Net tab).

Once connected the third party software will take control of the system, however the FG7 can still issue commands and the third party will see the change in the system and can accept it or override it by reversing the command of the FG7.

If there are IO cards in the system then the mapping of the third party software is followed. It is however advisable to load the identical mapping into the FG7 so that if the communication to the software is lost the commands from inputs and the relay outputs on the IO card(s) will remain identical to the mapping in the third party software, the system would not change due to the communication break.

If the AbsoluteIO option has been ticked under the system tab the third party software would still have control but if the communication to the FG7 fails then control would be given to the mapping of the inputs of the IO card(s) and not to the FG7 User (see AbsoluteIO).

DOCUMENT REVISION HISTORY

Revision 1.0
10 Feb 2017

Revision 1.1
8 March 2017
Added IP addressing and screen calibration

Revision 1.2
9 May 2017
Mapping and procedures added

Revision 1.3
20 July 2017
Added Sync fail, Extended Comms timeout, Alarm sensor mode and proxy options
Changed IO mapping Global and specific on different IO cards.

Revision 1.4
12 September 2017
Changes to allow for an 8 input and 8 output relay card

Revision 1.5
21 February 2018
Changed Extended Comms timeout to Nemlink, added AbsoluteIO, removed picture of 5 relay IO board, inserted picture of 8 relay IO board, added third party integration

Revision 1.6
6 June 2018
Added Web interface, placed defaulting under user tab, added failsafe
End of document