

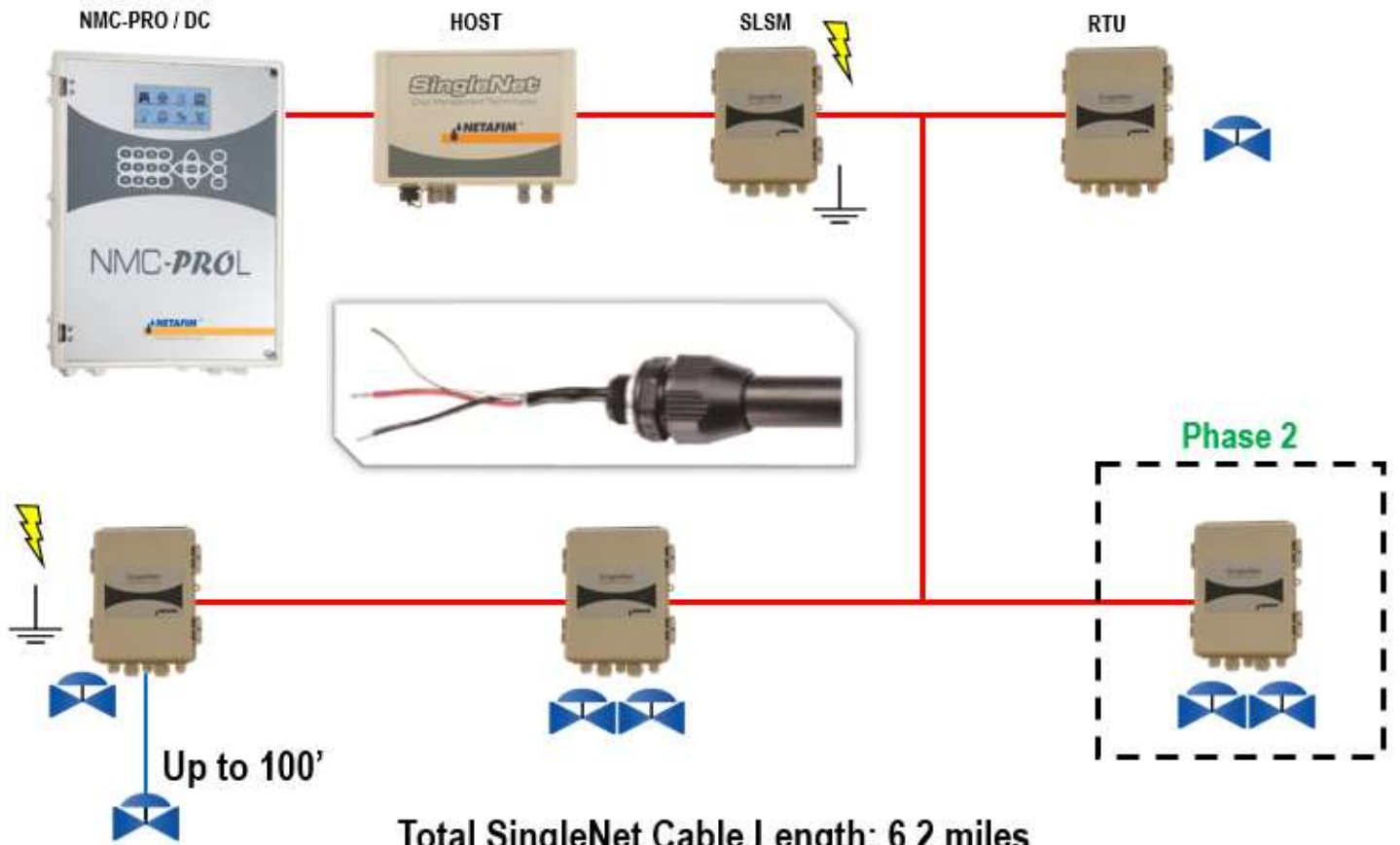


SingleNet v3 Step-by-Step Guide for NMC DC / Pro

Updated 2018-09-25

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NMC Pro / DC Setup

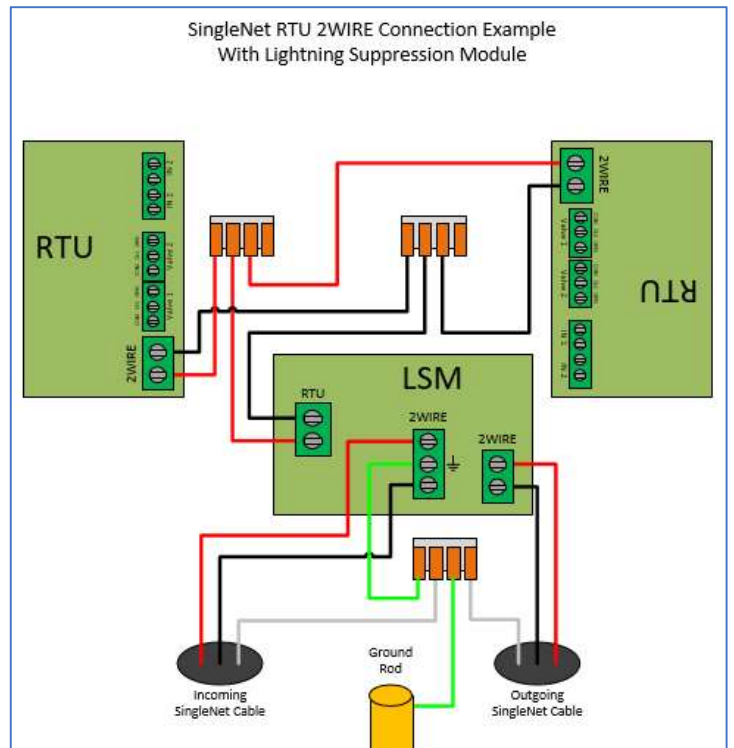
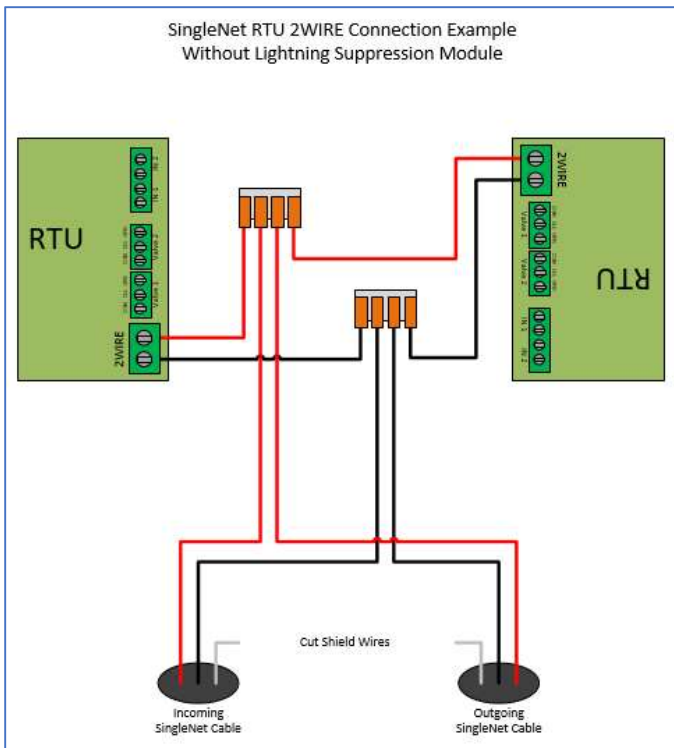
1. Power off the controller
2. Install NMC License Key on CPU card
3. If applicable, install NMC communication card, existing communication card is OK to use
4. Power on the controller and look for NEW CARD FOUND message and choose YES to install
 - a. If you don't see this prompt,
 - i. Power off the controller
 - ii. Press and hold the LEFT ARROW key
 - iii. Power on the controller, do not let go of LEFT ARROW key until you see the NEW CARD FOUND message, then select YES to install
 - b. Go to **Menu 5.7** and check **Qty. Rem. Output Key**. Should say 128 or 256
5. Go to **Menu 6.2** and change **Remote Unit Type** to **SN/RF Net**

SingleNet Host Hardware Setup

1. Connect the Host to the NMC Pro/DC communication card with a shielded cable
 - a. For RS232, you need three conductors and a shield
 - i. NMC Upper TX to Host RS232 (2) RX
 - ii. NMC Upper RX to Host RS232 (2) TX
 - iii. NMC Upper COM to Host RS232 (2) GND
 - iv. Cable shield to ground plate/bar (not GND terminal)
 - v. Host LK1 & LK2 jumper on bottom 2 pins
 - b. For RS485, you need two conductors and a shield
 - i. NMC Upper A to Host RS485 (2) A
 - ii. NMC Upper B to Host RS485 (2) B
 - iii. Cable shield to ground plate/bar (not GND terminal)
 - iv. Host LK1 & LK2 jumpers on top 2 pins
2. Connect the Lightning Suppression Card
 - a. 2WIRE connections are not polarity specific, but we recommend keeping wire colors consistent to aid with troubleshooting
 - b. Connect Host **2WIRE** terminal to Lightning Suppression Card **Controller (Output)** terminal
 - i. Use SingleNet cable removed from poly conduit
 - ii. **Disconnect Host 2WIRE plug until system is ready for testing**
 - c. Connect Lightning Suppression Card **Line (Input)** terminal to RTU(s) **2WIRE** terminal
 - i. Use SingleNet cable in poly conduit
3. Connect 12vDC power to Host

SingleNet RTU Hardware Setup

1. Connect SingleNet cable to RTU 2WIRE terminal
 - a. 2WIRE connections are not polarity specific, but we recommend keeping wire colors consistent to aid with troubleshooting
 - b. If daisy chaining RTU's together, we recommend splicing wires with wire nuts or lever nuts, don't use the RTU 2WIRE terminal as a splice for large wire (18 AWG or smaller is okay).
 - c. In RTU's with a lightning suppression module (LSM), connect the LSM to a ground rod and insert the ground rod in wet soil (under a air vent or pressure regulating pilot works best).



2. Connect the RTU inputs and outputs (Valve 1 & Valve 2)
 - a. Valve 1 & 2 wire colors are marked near the terminal
 - b. In1 & 2 terminals are not polarity specific
3. After all RTU's are wired, use volt meter in continuity mode to check 2WIRE path for short
4. **Connect Host 2WIRE plug ONLY when system is ready for testing**

Programming the RTU's

1. Getting Started (this single step **requires Internet** access, once complete, Internet access is no longer needed)
 - a. Download the latest version of PoleNet from the CMT portal (<http://www.netafimusa.com/cmt-portal>)
 - b. Locate **.zip** file and extract to a folder on your PC, **do not run polenet.exe from the .zip file**
 - c. Connect the PoleNet programming cable to your PC and let Windows download required drivers
 - i. This requires Administrator rights in Windows, ask your I.T. professional for help
2. Connect PoleNet programming cable to RTU
3. Start PoleNet
 - a. Open PoleNet software, "**polenet.exe**"
 - b. Click **Configure Connection**
 - c. Step 1 – Choose **Two-wire System**
 - d. Step 2 – Choose **RTU**
 - e. Step 3 – Choose **USB Serial Port**
 - i. If you don't see the USB Serial Port, ask your I.T. professional for help
 - f. Turn Advanced mode = **on**
 - g. Click **OK**
4. Program RTU
 - h. Click **Connect**
 - i. If you get a Connection Lost error, make sure the RTU has power from the Host.
 - i. Click **Setup RTU Configuration**
 - i. **RTU ID:** Assign a unique ID and record on NMC configuration sheet

- ii. **Pre-empt: 18**
 - iii. Click **Update**
- j. Click **Monitor**
 - i. Verify **Line Voltage**: ~ 24-30 V
 - ii. Verify **Charge Output 1**: Should be close to Line Voltage
 - iii. Verify **Charge Output 2**: Should be close to Line Voltage
 - iv. Test Output 1
 - 1. Click **On** next to Output 1
 - a. Output 1: 0 should change to 1
 - b. Charge Output 1 voltage should drop and recharge
 - c. Solenoid or relay should make a click sound
 - i. If Charge Output voltage does not drop or solenoid/relay does not make a sound then check your wiring or replace solenoid/relay.
 - 2. Click **Off** next to Output 1
 - a. 1 should change to 0
 - b. Charge Output 1 voltage should drop and recharge
 - c. Solenoid or relay should make a click sound
 - v. **Repeat** step iv for Output 2 if applicable
 - vi. Click **Close**
- 5. Click **Disconnect**
- 6. Disconnect PoleNet programming cable from RTU
- 7. **Repeat** steps 1 through 6 for any remaining RTU's

Programming the Host

1. Connect PoleNet **programming cable** between PC & Host
2. Start PoleNet
 - a. Open PoleNet software, "**polenet.exe**"
 - b. Click **Configure Connection**
 - c. Step 1 – Choose **Two-wire System**
 - d. Step 2 – Choose **Host unit**
 - e. Step 3 – Choose **USB Serial Port**
 - i. If you don't see the USB Serial Port, ask your I.T. professional for help
 - f. Turn Advanced mode = **on**
 - g. Click **OK**
3. Click **Connect**
4. Click **Select control mode**
 - a. Choose **NMC PRO**
 - b. Click **OK**
5. Capture RTU's
 - a. Click **Monitor**
 - b. Verify that all **RTU ID's** are present in the **Unit** column. If RTU's are missing...
 - i. Verify wire connections at that RTU
 - ii. Use PoleNet to verify correct RTU ID at that RTU
 - c. Click **Capture**
 - d. Click **Yes** to acknowledge warning
 - e. Click **OK** to acknowledge confirmation
 - f. Verify that all RTU ID's say **Yes** in **Capt** column

- g. Click **Close**
- 6. Map RTU's
 - a. Click **Configure Controller**
 - b. Click **Use Non-Linear Mapping**
 - c. Click **Setup**
 - i. In the bottom area, check the **Only show Available/Used Units** box
 - ii. In the **left column**, pick the desired **NMC Output #**
 - 1. You should choose a number that does not conflict with a physical NMC output, (i.e. if your controller has 16 – 24vAC outputs, start at NMC Output 17)
 - iii. In the **right column**, pick the desired **Free output**
 - iv. Click the < icon to assign the outputs together,
 - v. **Repeat** steps ii through iv for any remaining output assignments
 - vi. Click the **Inputs** tab
 - vii. In the **left column**, pick the desired **NMC Input #**
 - 1. You should choose a number that does not conflict with a physical NMC input, (i.e. if your controller has 8 – digital inputs, start at NMC Input 9)
 - viii. In the **right column**, pick the desired **Free Input**
 - ix. Click the < icon to assign the inputs together
 - x. **Repeat** steps vii through ix for any remaining input assignments
 - xi. Click **Program**
 - xii. Click **Save**
 - 1. Pick a location and file name
 - 2. Click **Save**
 - xiii. Click **Exit**
 - d. Click **OK**
- 7. Test RTU's
 - a. Click **Monitor**
 - b. Use the Test > Relays menu on the **NMC controller (Menu 5.1)** to activate an RTU output and verify the operation with the PoleNet Monitor.
 - i. When activating an RTU output you should see the Out1 or Out2 column change from 0 to 1, the If you have someone near the RTU, they should hear the solenoid or relay click.
 - c. **Repeat** step b to test any remaining RTU outputs
 - d. Use the Test > Digital Input menu on the **NMC controller (Menu 5.2)** to verify RTU inputs and verify the operations with the PoleNet Monitor.
 - i. When activating an RTU input (like a float switch or water meter) you should see the In1 or In2 column increment for every on/off pulse of the input. You should see the same increment on the NMC > Test > Digital Input menu.
 - e. Click **Close**
- 8. Click **Disconnect**
- 9. Disconnect PoleNet **programming cable** from Base