

FOR INDOOR USE ONLY

TPC / CHK-400 Installation Guide

This device must be installed in accordance with all applicable electrical and building codes and with the Authority Having Jurisdiction (AHJ). This device must only be installed by qualified personnel.



IMPORTANT NOTICE: This document applies to the following:

TPC-101 (Frequency - 160kHz) for use with NMC-101 (Frequency - 160kHz)
 TPC-102 (Frequency - 132kHz) for use with NMC-102 (Frequency - 132kHz)
 The TPC devices are frequency dependent and are not compatible with NMCs of a different frequency. The Model Number (Frequency) of the TPC can be found on the front label of the TPC. The Model Number (Frequency) of the NMC can be found on the inside door label of the NMC. Ensure that the TPC Frequency is the same NMC Frequency. The CHK-400 is not frequency dependent and therefore can be used with any TPC.

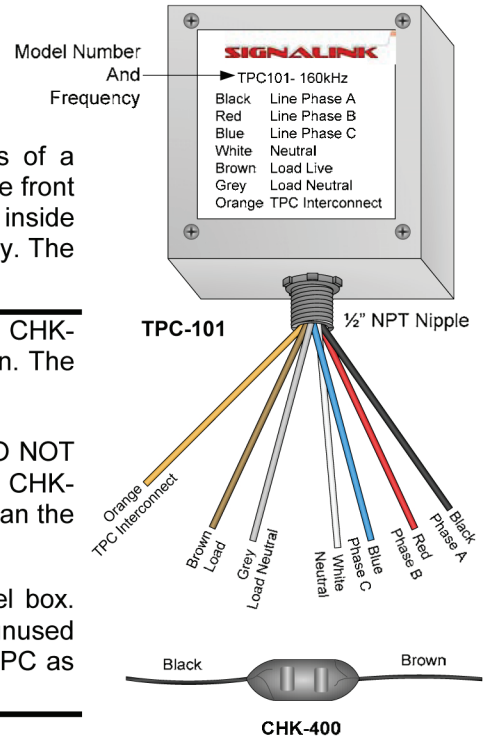
Three Phase Installation: Figure 1 shows a typical three phase installation. The CHK-400 is non-polarized and therefore the black wires can be connected in any fashion. The Orange wire (TPC Interconnect) is not used in this example.



WARNING: The CHK-400 is ONLY rated to supply power to the NMC. DO NOT connect additional loads, equipment or apparatus to the **LOAD** side of the CHK-400. Equipment damage or electrical hazards may occur if anything other than the NMC and TPC is connected as shown or if CHK-400 is installed incorrectly.



IMPORTANT: The junction box should not be less than a 4-11/16" steel box. Dress the wiring within the junction box as neat as possible. Cap off all unused wiring to prevent undesirable shorts. For Optimal performance, install the TPC as close to the NMC as possible.



Typical Three Phase Installation

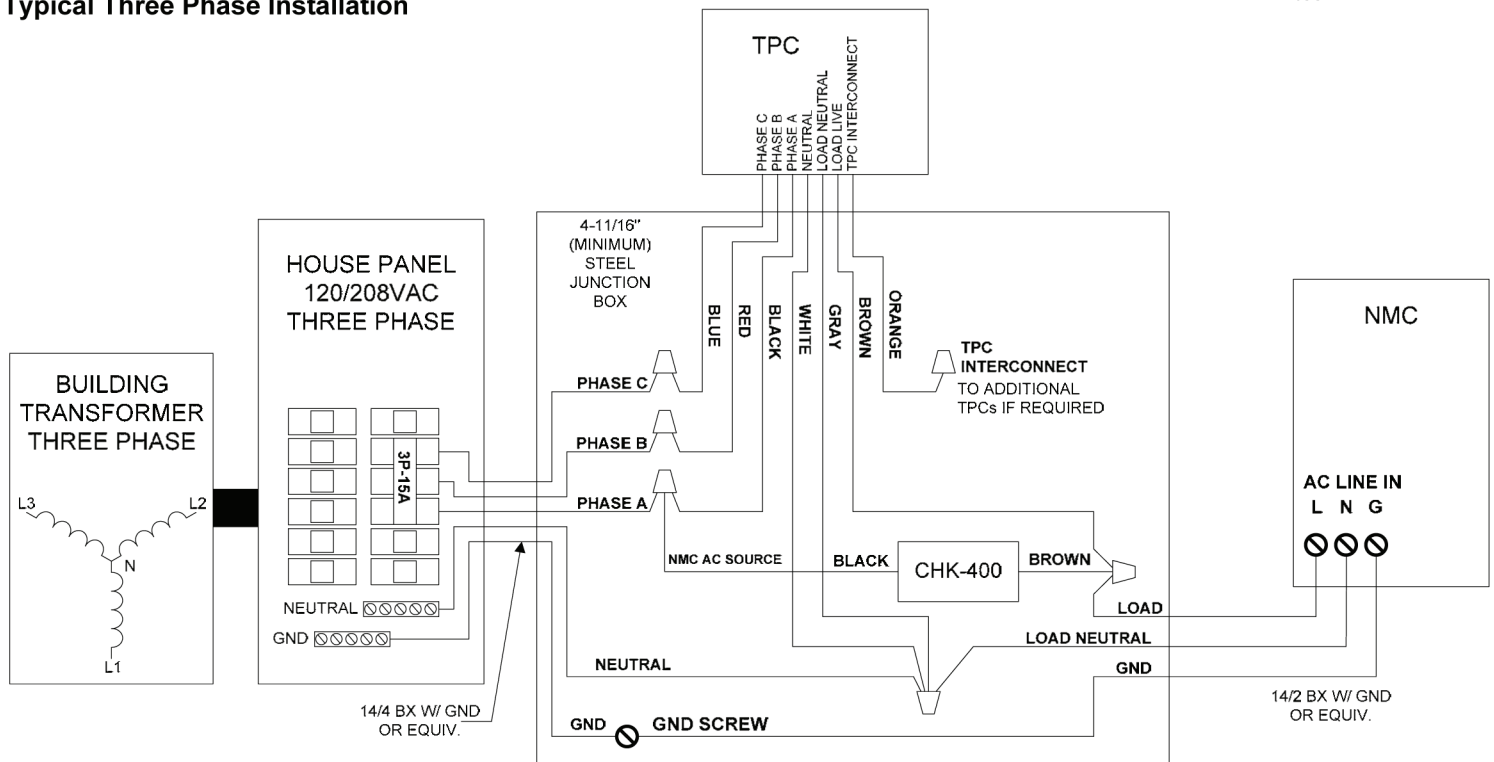


Figure 1

MULTIPLE TRANSFORMER INSTALLATION

Multiple Transformer Installation: Figure 2 below shows a typical three phase installation where multiple transformers exist in the building's electrical distribution network. The Orange (TPC Interconnect), the Brown (Load Live) and the Grey (Load Neutral) wires of one TPC are connected to the same wires of the other TPCs (daisy chained). Note that this applies to multiple TPCs connected to multiple transformers, **NOT** to multiple NMC/TPC pairs. The CHK-400 is only used on the TPC supplying power to the NMC, and not used with the other TPCs. The TPCs should be installed as close to each other as possible.



IMPORTANT: All TPCs being interconnected **MUST** be the same frequency.

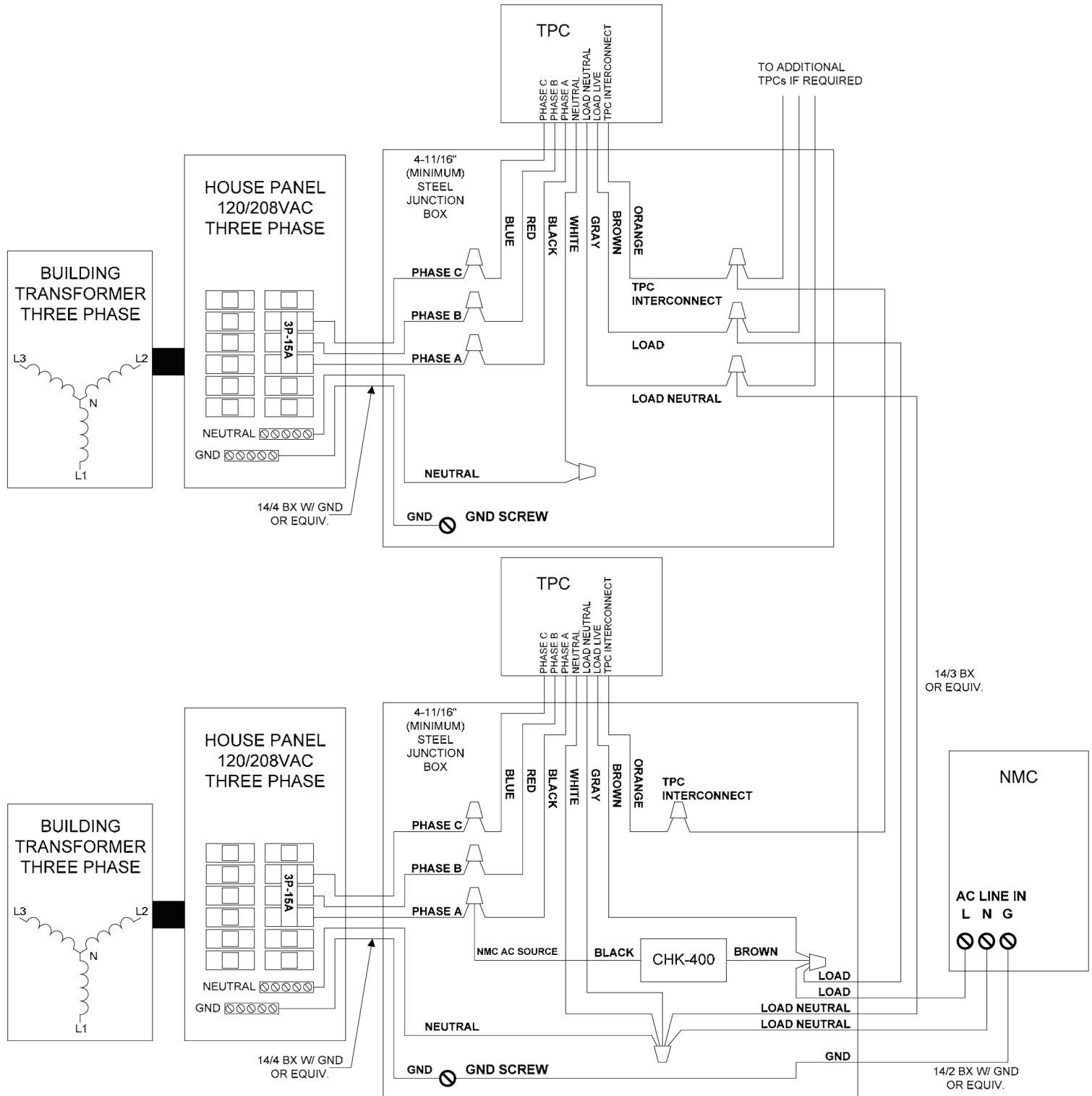


Figure 2

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SINGLE PHASE INSTALLATION

Single Phase Installation: Figure 3 below shows a typical single phase TPC installation. Install the TPC as close to the NMC as possible. Ensure all unused wiring is capped off to prevent undesirable shorts. If multiple transformers exist in the building's electrical distribution network, the Orange (TPC Interconnect), the Brown (Load Live) and the Grey (Load Neutral) are connected to the like wires of the other TPCs. See Multiple Transformer Installation for reference.

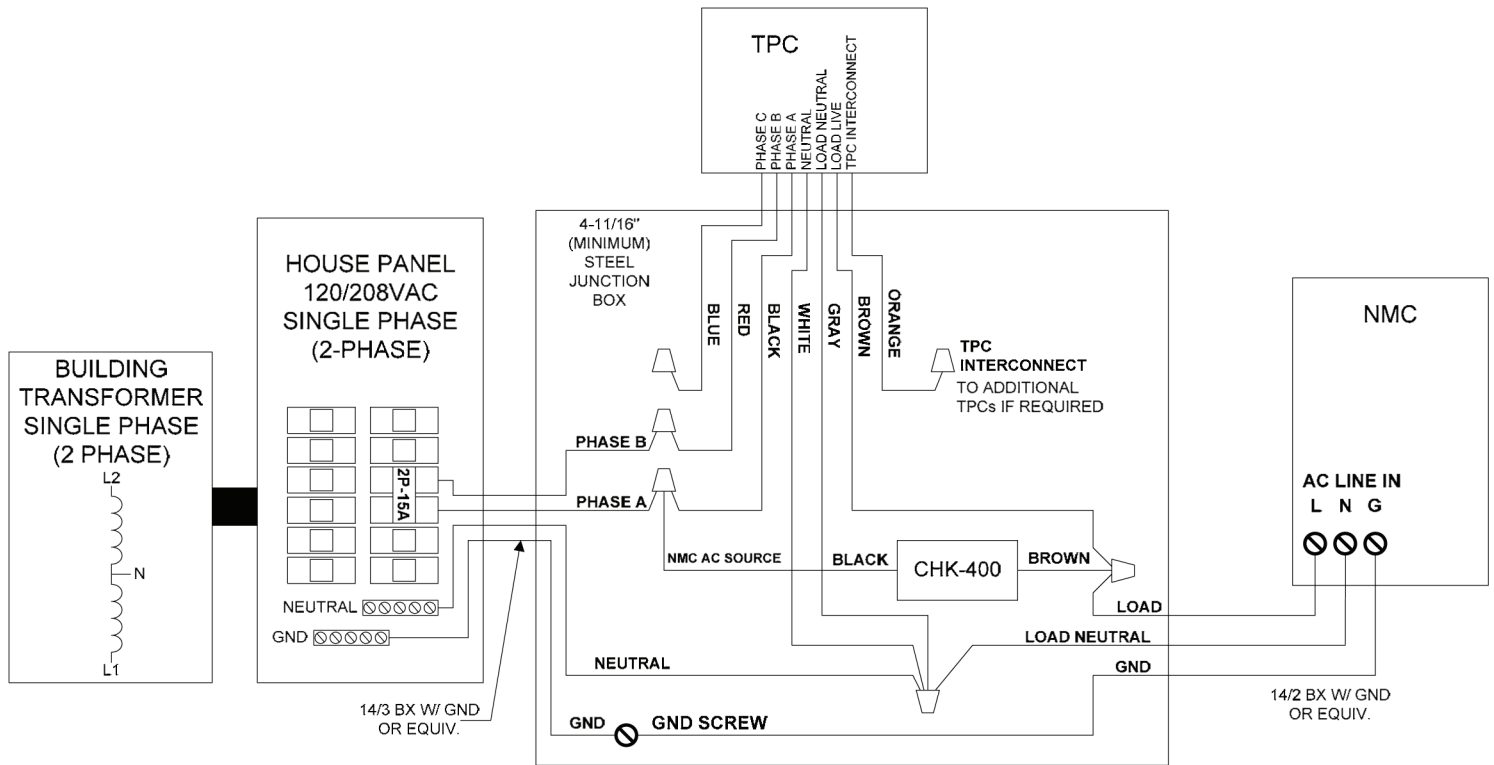


Figure 3

GENERAL INSTALLATION REQUIREMENTS



- Do Not:** Modify the TPC or the CHK-400 in any way, other than wire length.
- Do Not:** Install this equipment where it can be exposed to excessive heat, moisture or corrosive elements.
- Do Not:** Install this equipment outdoors.
- Do Not:** Install this equipment on any circuits greater than 250VAC nominal.
- Do Not:** Install this equipment where it can be physically damaged by other equipment.
- Do Not:** Install this equipment for use on any other application.
- Do Not:** Install this equipment on any Fire-Link® controllers other than Fire-Link® II controllers (NMC-101, NMC-102, NMC-103).

IMPORTANT: Certain building electrical configurations make it difficult or maybe even impossible to install this product. Below is a list of configurations that may present installation problems.

- If the service transformers service more than one building AND each building has its own fire alarm system AND the Fire-Link®II product is to be installed in each building, a separate NMC will have to be installed in each building with its own TPC and CHK-400. If the buildings are in very close proximity, crosstalk can occur and may interfere with each other.
- If the building is serviced by more than one transformer, a TPC must be installed for each transformer. If the panels that are fed from these transformers are located greater than 50 feet from each other, there may be considerable signal loss when connecting between them.
- If there are more than three transformers, considerable signal loss will occur.
- If there is an emergency generator, the TPC must not be installed on the emergency panel. In most configurations, the transfer switch will open the circuits which supply the suites thus opening the signal path.
- If the house panel does not have the same number of phases as the building, e.g. the panel is single phase (2 phase) and the building is three phase, the third phase will not be coupled and provisions must be made to couple to the third phase.
- If the house panel is on a separate transformer than the suites, provisions must be made to couple to the suite transformer.
- If there are no spare breaker spaces in the house panel to connect the TPC, provisions will have to be made such as adding a sub panel.

Please do not attempt to install this equipment if there is any doubt about how or where to install the TPC and/or the CHK-400. Contact **Technical Support at 1-888-765-7514** Monday to Friday, 7:30 - 4:30 Pacific Time.

SYSTEM OVERVIEW

TPC Introduction: The Fire-Link® II System is a fire alarm signaling system that communicates with its devices over a building's existing AC wiring infrastructure using Power Line Carrier (PCL) technology. The main controller (NMC) connects to a single 115VAC source, however the signals must be coupled to the other electrical phases to communicate with the devices on the other phases. The TPC is the coupling device that couples the communications signals from the NMC to the other phases. In most cases there are appliances and equipment which produce high frequency electrical noise that interferes with the communication signals. The CHK-400 is used to block these noise sources from the NMC. It is important to note that if the CHK-400 is not installed properly, it will prevent the NMC from being able to communicate with its devices. A TPC and a CHK-400 must be installed and must be installed correctly for the Fire-Link® II system to operate properly. The Fire-Link® II System devices can operate on one of three different frequencies, 160kHz, 132kHz or 114kHz. Devices from one frequency group **WILL NOT** work with devices of another frequency group. The chart below shows which device model numbers are compatible. The CHK-400 is not frequency dependent and therefore is compatible with all NMC models.

Frequency	NMC Model	TPC Model	ISD Model
160kHz	NMC-101	TPC-101	ISD-2501
132kHz	NMC-102	TPC-102	ISD-2502
114kHz	NMC-103	TPC-103	ISD-2503

Installation Overview: Generally, the wiring infrastructures of most buildings are similar in nature. However, the type and location of the electrical equipment varies significantly. A thorough site survey of the building's electrical distribution equipment, its location, its type and its configuration is extremely important in deciding where and how to install the SPC-3P / CHK-400.

Here are some important things to look for:

- Location of the building's low voltage (120/208) transformers. A building may have more than one transformer.
- Number of electrical phases. Is the building single (2 phase) or 3 phase?
- Does the transformer feed more than one building? Multiple buildings can be serviced by only one transformer.
- Location of the building's electrical rooms. There may be more than one electrical room.
- Location of the house (common) distribution panels. There may be more than one house panel.. Additional house panels may be located in separate electrical rooms. Are the house panel phases the same as the building's phases. Some house panels are single phase but the building is three phase.
- Is the house panel on a separate transformer than the suites?
- Available spare breaker spots in the house panel. A sub panel may need to be installed if there is no spare availability in the house panel.
- Location of the meter banks, if any.
- Location of the emergency generator, if equipped.
- Location of the fire alarm panel.

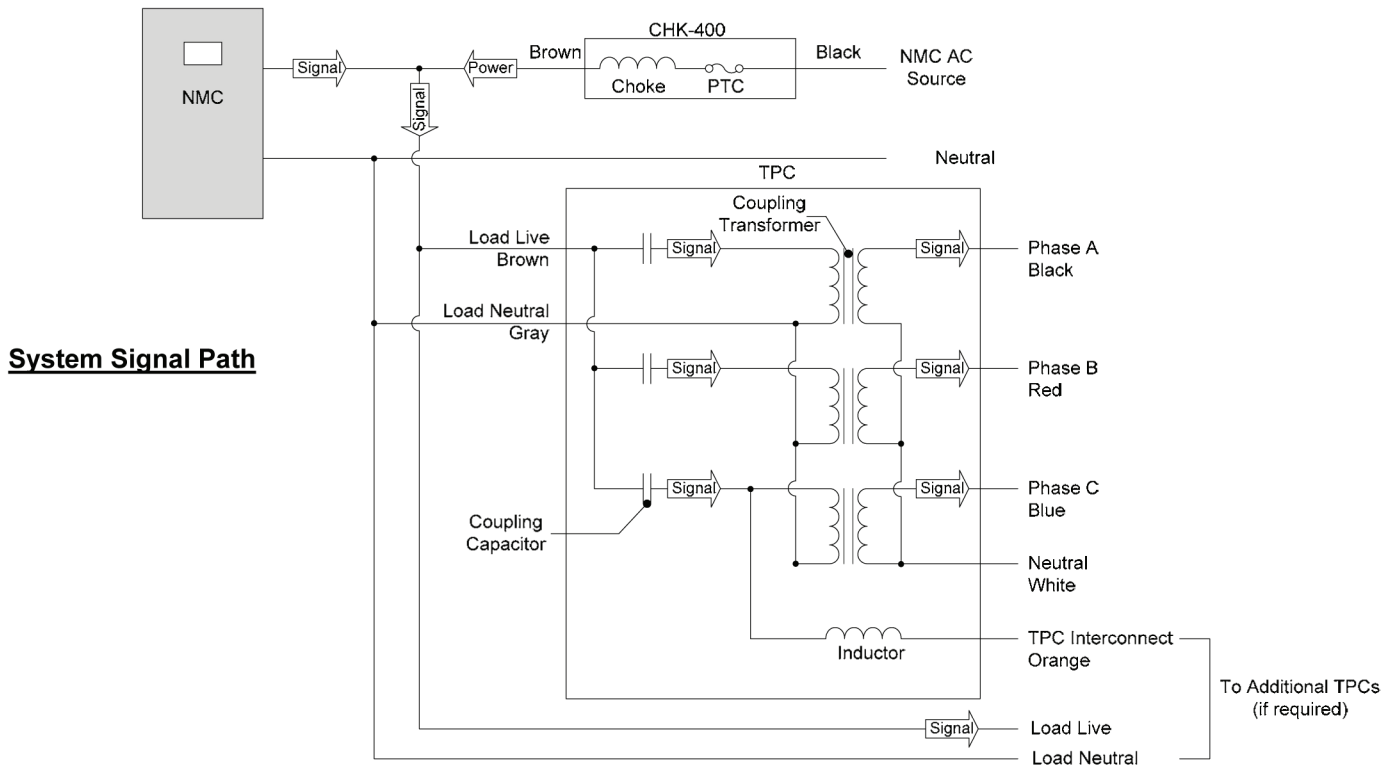


Figure 4

Figure 4 shows a simplified connection overview. The power source is generally one of the phases connected to the SPC-3P, but it does not necessarily have to be. The power source will almost always have a certain amount of detrimental noise carried with it. The power, along with its noise component are connected to the CHK-400, where the AC Power is allowed to pass through, powering up the NMC, but it strips off the noise. Signals from the NMC are then passed to the SPC-3P where they are coupled onto the other phases. **NOTE:** The CHK-400 has two black wires and is non-polarized. There is no "IN" and "OUT".