

# H8920-4



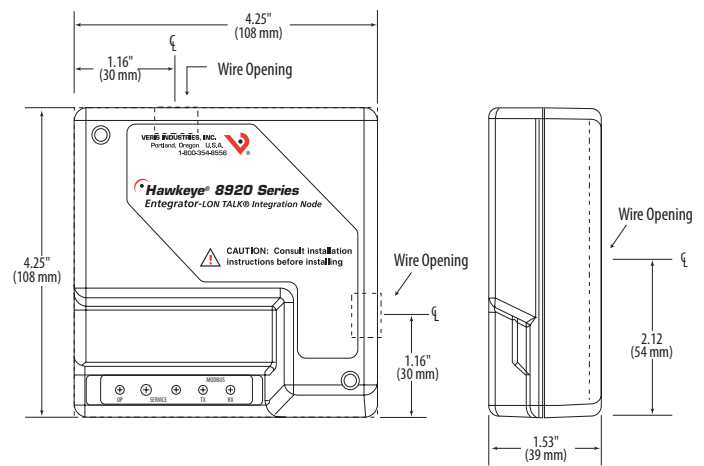
# H8920-4

## LONTalk Integration Node For Use With H704 and H663 Branch Current Monitors (BCM)

### Installer's Specifications

LonWorks® Network	Free topology transceiver, 78 kbps
Modbus Network	RTU 9600 BAUD, 8N1 format
Network Variable Type	Fixed point real
Input Power	16-24 VAC/DC, 100mA (max.)
Temperature Range	0 to 60°C (32 to 140°F)
Humidity Range	0 - 95% non-condensing

### DIMENSIONS



## **⚠ DANGER ⚡**

### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Read, understand and follow the instructions before installing this product.
- Turn off all power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm power is off.  
DO NOT DEPEND ON THIS PRODUCT FOR VOLTAGE INDICATION
- Only install this product on insulated conductors.

**Failure to follow these instructions will result in death or serious injury.**

## NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- The installer is responsible for conformance to all applicable codes.
- Mount this product inside a suitable fire and electrical enclosure.

### FCC PART 15 INFORMATION

**NOTE:** This equipment has been tested by the manufacturer and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications to this product without the express authorization of Veris Industries nullify this statement.

### PRODUCT IDENTIFICATION

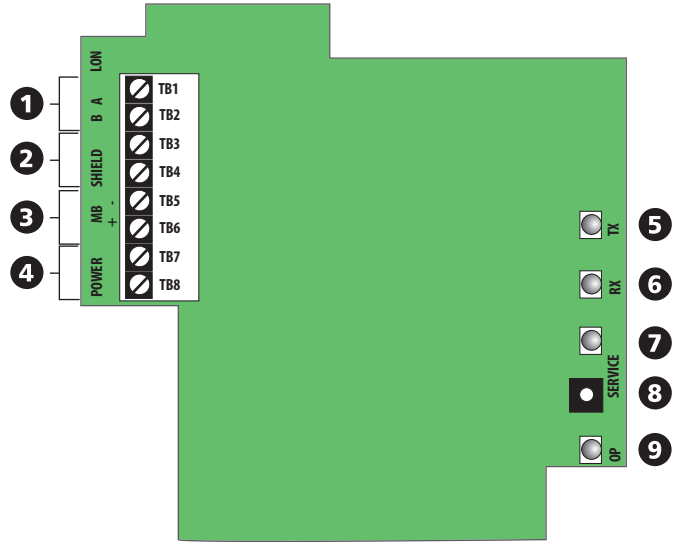
MODEL	DESCRIPTION
H8920-4	H704/H663 to LonTalk® integration node

**OPERATION**

The H8920-4 LONTalk Integration Node allows the integration of Veris Industries H704 and H663 Series branch current monitors (BCM) with a LON Works control/monitoring system. The H8920-4 converts the metering data network variables collected by the BCM as Modbus protocol to LONTalk. Using an indexing technique, the H8920-4 reports the data from up to 63 BCMs on the downstream Modbus network. Adjusting an input variable allows selection of the Modbus address of the desired meter. The data is then recorded before selecting another BCM. The H8920-4 can also be used for binding purposes with a single BCM.

The H8920-4 polls the BCM for its full data set approximately once per second. All output data network variables are immediately updated with this received data. Data exchanged between the node and the meter are fully checksummed to ensure integrity. If corrupt data is detected, the output network variables are not updated and retain their previous value.

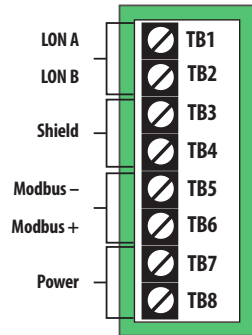
**PRODUCT DIAGRAM**



1. **LON Talk Terminal Block:** Connect to the LON network at these terminals. This connection is not polarity sensitive.
2. **Shield Terminal Block:** Communications shielding for both the LONTalk and Modbus communications networks.
3. **Modbus Terminal Block:** Connect to the H704/H663 Modbus network. This connection is polarity sensitive; ensure correct polarity.
4. **16-24 VAC/DC Power:** Two-wire system power terminal block.
5. **TX LED:** Indicates transmission of Modbus network data
6. **RX LED:** Indicates reception of Modbus network data
7. **Service LED:** Standard LON Works Service LED. Used in concert with the Service Switch to locally view the commissioning status of the device. LED status after the service switch is pushed:
  - ON, then OFF solid = Device has been commissioned by a network tool.
  - BLINK at 1/2 Hz rate = Device has not been commissioned by a network tool.
  - ON, OFF, then solid ON = Device does not have an application.
8. **Identification Service Switch:** Standard LonWorks Service Switch. Used in concert with the Service LED to locally view the commissioning status of the device.
9. **OP LED:** Normally on. The OP LED will blink off when there is an incomplete data exchange between the meter and the LON node. If this LED is always off, then the meter is not responding to data requests (i.e., the meter is disconnected, unpowered, or incorrectly wired).

## INSTALLATION

1. Remove screws from the lid of the H8920-4 housing. Lift lid and remove wire guide caps. Set aside with the lid.
2. Bring the H704/H663 RS-485 network cable to the Modbus terminal block marked +MB-. Thread wires through wire guide before terminating. Connect the (+) to TB6. Connect the (-) wire to TB5. Connect the shield wire to TB4.
3. Bring the LON Works network cable to the terminal block marked BA LON. Thread wires through wire guide before terminating. Connect the A wire to TB1. Connect the B wire to TB2. Connect the LON network shield wire to TB3.
4. Connect the 16-24 VAC/DC power wires to TB7 and TB8. The power terminals are not polarity sensitive. This power source must be separate and isolated from other circuits to prevent unwanted "ground loops."<sup>\*</sup>
5. Thread wires through the most convenient openings in the housing.
6. Re-attach the lid and snap wire guides into place. Replace screws to hold the housing together.
7. Mount the H8920-4. The device can be flush mounted to a wall, screw mounted to a 2 or 4s electrical enclosure, or nipple mounted to an existing enclosure. Mount the H8920-4 in a class 2 environment.
8. Refer to the H704/H663 installation instructions for connection of the LON node to the BCM.



<sup>\*</sup> Veris transformers such as X020xxx, X040xxx or X050xxx or DC power supplies such as PS-24-7.5, 15, or 30 fulfill these requirements. If the installation only has non-isolated 24 VAC available, then a Veris transformer such as X020ADA can provide the necessary isolation.

## CONFIGURATION

1. Upon powering up, the OP-LED is lit.
2. During operation, the OP-LED turns off if either of the following occurs:
  - a) No Modbus requests are generated by the unit for 10 seconds. This occurs with new units (which have yet to be commissioned) or any units which are in "Unconfigured," "Off-Line" or "Disabled" LonTalk states. Under these conditions, the neuron chip will not generate requests to the Modbus network.
  - b) No response or an error response from the Modbus network (e.g. no meter attached, wrong type of meter (H8035 instead of H704/H663), broken RS-485 wires, etc.).
3. If the OP-LED is OFF for any reason covered in step 2 above, it will be re-lit when a correct response is received from the Modbus network.
4. Under Condition 2b above, the floating-point SNVT data will be replaced with floating-point-not-a-number (NaN,0x7FC0000), indicating to the remote user that the data is no longer valid.

### Index Feature

By adjusting the network input variable nviMeter Index, the Modbus address used to populate all of the NVOs can be changed. This option is used to view and archive data from a Modbus network of up to 63 H704/H663 BCMS. Using this feature eliminates the possibility of binding any points from the node. If the application requires binding, the LON node can only view one BCM.

### Using the Meter-Index Function

To ensure that the data read from the unit corresponds to the correct meter, follow this algorithm:

1. Change nviBCM Index to the desired BCM.
2. Wait for nvoBCM Index to change to the same value as nviBCM Index. Do not read data from the unit until this occurs: You will not be able to determine which BCM the data corresponds to until nvoBCM Index=nviBCM Index. Do not use "time-delays" to wait for the new data to be valid.
3. Once nvoBCM Index=nviBCM Index, you may poll values with the assurance that the data corresponds to the desired BCM.

### Power Meter Configuration

If binding is required, use Modbus address 1 for the BCM. When employing the indexing method, use addresses 1-63. Please refer to the H704/H663 Installation Instructions for meter addressing information.

### Auto Propagate Feature

The H8920-4 automatically propagates all network variables. If nciMaxSendTg is set above zero (default is zero), all variables are propagated periodically. Units are in tenths of a second. For example, if nciMaxSendTg is set to 100, the H8920-4 will automatically propagate all variables every 10 seconds.

**Node Identification**

**Wink:** The LON Node will light its service LED for 5 seconds in response to a WINK command.

**Service Pin:** A service pushbutton is provided for this method of identification. (See Product Diagram section).

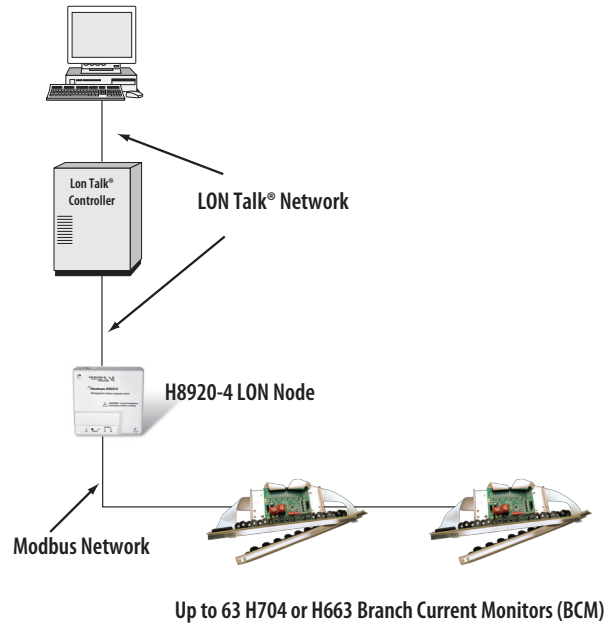
**Neuron ID:** The Neuron ID is located on a label on the back of the device. It can be written down or peeled off as a removable sticker with bar code for easy insertion to your network.

**Program ID**

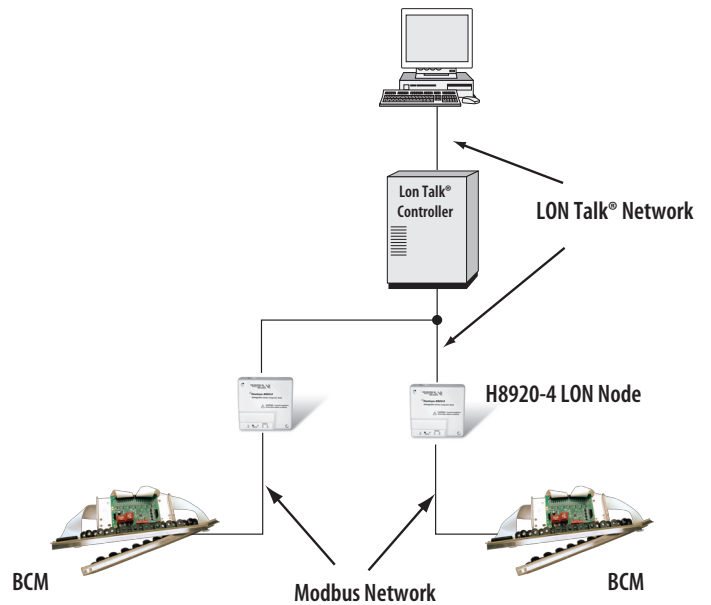
The standard program ID for this product is 90:00:14:48:14:04:04:05

**NETWORK OPTIONS**

Indexing Option: Allows the node to access up to 63 H704 or H663 BCMs for viewing and archiving purposes only



Bound Option: For all applications requiring binding\*



\*If the bound option is employed, address each BCM at 1.

**VERIS H704/H663 SERIES  
BRANCH CURRENT MONITORS**

nv1	nvol_1	SNVT_amp
nv2	nvol_2	SNVT_amp
nv3	nvol_3	SNVT_amp
nv4	nvol_4	SNVT_amp
nv5	nvol_5	SNVT_amp
nv6	nvol_6	SNVT_amp
nv7	nvol_7	SNVT_amp
nv8	nvol_8	SNVT_amp
nv9	nvol_9	SNVT_amp
nv10	nvol_10	SNVT_amp
nv11	nvol_11	SNVT_amp
nv12	nvol_12	SNVT_amp
nv13	nvol_13	SNVT_amp
nv14	nvol_14	SNVT_amp
nv15	nvol_15	SNVT_amp
nv16	nvol_16	SNVT_amp
nv17	nvol_17	SNVT_amp
nv18	nvol_18	SNVT_amp
nv19	nvol_19	SNVT_amp
nv20	nvol_20	SNVT_amp
nv21	nvol_21	SNVT_amp
nv22	nvol_22	SNVT_amp
nv23	nvol_23	SNVT_amp
nv24	nvol_24	SNVT_amp
nv25	nvol_25	SNVT_amp
nv26	nvol_26	SNVT_amp
nv27	nvol_27	SNVT_amp
nv28	nvol_28	SNVT_amp
nv29	nvol_29	SNVT_amp
nv30	nvol_30	SNVT_amp
nv31	nvol_31	SNVT_amp
nv32	nvol_32	SNVT_amp
nv33	nvol_33	SNVT_amp
nv34	nvol_34	SNVT_amp
nv35	nvol_35	SNVT_amp
nv36	nvol_36	SNVT_amp
nv37	nvol_37	SNVT_amp
nv38	nvol_38	SNVT_amp
nv39	nvol_39	SNVT_amp
nv40	nvol_40	SNVT_amp
nv41	nvol_41	SNVT_amp
nv42	nvol_42	SNVT_amp

**MANUFACTURER-  
SPECIFIC  
NETWORK  
VARIABLES**

Nv43	nviBCMIndex	SNVT_count
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Nv44	nvoBCMIndex	SNVT_count
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nc45	nciMaxSendTg	<b>CONFIGURATION PROPERTIES</b> SNVT_time_sec
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