DATASHEET

TAMPER-PROOF ETHERNET & POE OVER COAX

HIGHWIRE® BASE 8 LINKLOCK

HIGHWIRE Powerstar Base 8 LINKLOCK can be 19" rackmounted in secure areas like banks and server rooms

LINKLOCK™ technology provides secure tamper-proof network connections over coax cable

LINKLOCK options are available in Veracity's high performance HIGHWIRE® Powerstar Base 4 and Base 8 Ethernet and POE over coax devices.

- Tamper-proof Ethernet and POE over coax
- 8 tamper-proof channels per Base device
- Tampering or interference with cabling shuts down channel
- Relay contact alarm output on tamper, with reset pins
- 32 POE or POE Plus channels in 1U with four Base devices
- Automatic configuration for simple installation
- Full duplex 100Base-TX performance on each coax

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LINKLOCK™ provides a secure barrier to unauthorised access to your network

LINKLOCK™ detects any disconnection/reconnection or tampering with any part of the cabling between the Base device and the IP camera or other POE device.

When Is LINKLOCK Required ?

Any externally mounted IP cameras potentially leave an exposed network connection which could be used by attackers to access the rest of the network - to disable the surveillance system for example. This may also expose the corporate network as this is often bridged to the surveillance network. LINKLOCK prevents such attacks by completely disconnecting power and data for that channel whenever it detects a cable disconnection or reconnection or even any tampering such as “tapping in” to the coax or network cables.

How Does LINKLOCK Work ?

LINKLOCK works by constantly monitoring the POE power connection and data transmissions. It can detect even subtle changes or interruptions in the data transmission characteristics which will trigger disconnection and alarm, whilst remaining extremely robust against false alarms.

Once triggered and disconnected, the channel can be re-established via the reset pins after suitable action is taken to determine the cause of the alarm (i.e. a possible attacker).

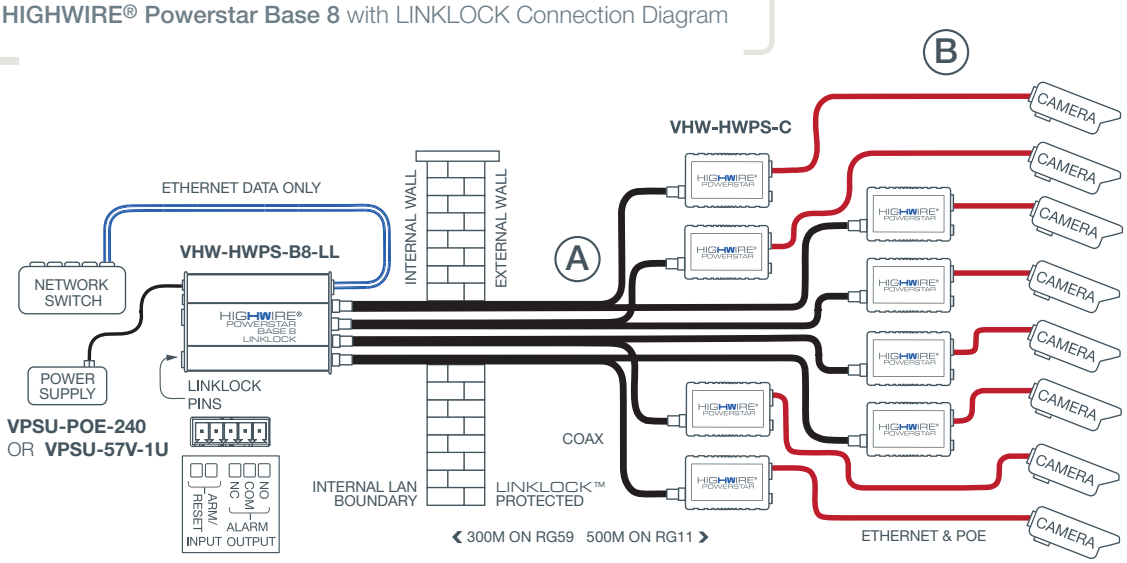
HIGHWIRE Powerstar Base LINKLOCK Option

LINKLOCK™ is available as an option on Veracity’s HIGHWIRE Powerstar Base 4 and Base 8 models of Ethernet and POE over coax adaptors.

The Base device accepts external power via a POE switch or a DC power supply. It sends power over the coax link to the Camera device. The camera device in turn provides POE (Power-over-Ethernet) to the IP camera.

See HIGHWIRE Powerstar Base 4 or Base 8 datasheets for full information on HIGHWIRE.

HIGHWIRE® Powerstar Base 8 with LINKLOCK Connection Diagram



Rackmount | *Four rackmounted HIGHWIRE Powerstar Base 8 Linklock devices assembled with a Veracity 1U PSU.*

Front | *8 coax links with status LEDs, plus a Gigabit uplink port.*

Rear | *Power connectors (screw terminal or micro-fit) with SFP socket for fibre module and LINKLOCK Pins.*

LINKLOCK Protection

LINKLOCK provides protection to both the coaxial cable and the Ethernet cable connecting the IP camera to the HIGHWIRE Camera device (sections A and B in the diagram opposite).

LINKLOCK disconnection (blocking mode) is triggered when:

| The coaxial cable A is disconnected
| The Ethernet cable B is disconnected
| The coaxial cable A is disrupted
| The Ethernet cable B is disrupted

Note that having a secure or encrypted link over the coax alone does not prevent intrusion as the Ethernet link to the camera would still be open and unsecured without LINKLOCK.

When blocking mode is enabled, all external equipment is immediately isolated from the internal LAN.

The internally-located HIGHWIRE Powerstar Base 4 or 8 device will:

| Remove POE Power from the coaxial cable (this disconnects and switches off the HIGHWIRE Camera device and IP camera).

| Completely disable its coaxial network interface for the triggered channel only.

| Close the alarm relay contact and indicate the alarm channel with a red LED.

Restoring the Connection

LINKLOCK blocking mode is constant until reset. For complete security it cannot be reversed through the external network or coaxial interface. The HIGHWIRE LINKLOCK Base device must be physically reset through the reset pins on the alarm interface connections. A push-button or relay is normally wired to the reset pins. If desired, network-controlled relay devices may be used to allow remote reset from any secure part of the network.

Typically, the camera disconnection would be used to trigger an alarm within the VMS (Video Management System) or NVR (Network Video Recorder).

Secure barrier to unauthorised access in high security sites, such as airports, banks and critical infrastructure sites.

TECHNICAL **SPECIFICATION**

HIGHWIRE® BASE 8 LINKLOCK

HIGHWIRE INTERFACE	
Connector type	BNC 75 ohm x 8
Cable type	Any 75 ohm coaxial (other impedances supported)
Range	Up to 300 metres [1000ft] on RG59 or 500 metres [1640 feet] on RG11 at full rate
Bandwidth	200 Mbps (total up + down) x 8
ETHERNET INTERFACE	
Connector type	RJ45 with optional SFP socket for fibre
Cable type	Cat 5/6 Patch or crossover, auto-detected or as per optional SFP device
Rate	Gigabit Ethernet, Full duplex (1000Base-TX) with auto-negotiation
LINKLOCK INTERFACE	
LINKLOCK Trigger	On disconnection or tamper of coax or network cable
LINKLOCK Alarm	Relay switch output (NO, COM, NC) on screw terminals connector
LINKLOCK Reset	Via reset pins on screw terminals connector
Connector	5-pin removable screw terminal connector
LEDS	
Status indicators	HIGHWIRE coax link - flashes red when LINKLOCK is triggered Ethernet link/activity (BASE) - flashes red when LINKLOCK is triggered See Quickstart Guide for LED indicator table and diagnostics. Guide also online
POWER	
Device power	10W rising to 20W under full POE load
POE Out	IEEE 802.3af (POE) or IEEE 802.3at (POE Plus) up to 25W per channel
Power input	57V DC, up to 6A via a 2 pin detachable screw terminal (supplied) or a 2-pin Micro-Fit power connector
PHYSICAL/ENVIRONMENTAL	
Dimensions	L 173mm (including BNC connectors) W 110mm H 40mm
Weight	572g [20.2oz]
Operating temperature	0ºC to 40ºC [32ºF to 104ºF]
Relative humidity	85% non-condensing
Compliance	FCC, CE, UKCA, RoHS, REACH
PRODUCT CODES	
VHW-HWPS-B8-LL	**HIGHWIRE Powerstar Base 8 LINKLOCK® eight channel device with LINKLOCK**
VHW-HWPS-B4-LL	**HIGHWIRE Powerstar Base 4 LINKLOCK® four channel device with LINKLOCK**
VHW-HWPS-C	HIGHWIRE Powerstar® Camera - single channel EOC adaptor for camera end
VPSU-POE-100-UK/EU/US	57V DC, 100W POE power supply with power cable for UK, EU or US
VPSU-57V-1U-UK	57V DC, 8800mA (400W max) power supply, with cable for UK
VPSU-57V-1U-EU	57V DC, 8800mA (400W max) power supply, with cable for EU
VPSU-57V-1U-US	57V DC, 8800mA (350W max) power supply, with cable for US

Only the Base device requires the LINKLOCK feature. These are used with standard Camera devices.

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Surge Protection
All Veracity products have been independently tested to verify their resilience to the stringent immunity levels of international standards. Users should note that no electronic equipment can be guaranteed to be completely protected at levels beyond the defined standard; therefore product warranty cannot include damage to products which has been caused by surges exceeding those of the standards specified, for example lightning strike activity.

It is the user's responsibility to implement relevant surge protection measures, as appropriate to the installation. This may include the fitting of additional surge protection devices where required.

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