

# OUTREACH<sup>TM</sup> MAX

UNIVERSAL ETHERNET & POE EXTENDER



## Power over Ethernet and network range extender

Power over Ethernet (POE) greatly simplifies the deployment of IP cameras, wireless access points & equipment more than 100m from network points

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Instantly doubles cable range to 200 metres

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Extends up to 800 metres with multiple units

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No local power required

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Full unrestricted network bandwidth

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Universal 10/100 compatibility

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Extends POE and POE Plus up to 60 watts

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# OUTREACH Max overcomes the distance limits of POE networks

Simply connecting an OUTREACH Max in line with the network cable instantly doubles the range from 100 metres to 200 metres (656 ft).

Cable lengths in Ethernet networks are limited to 100 metres (328 ft), which is a serious restriction for many security installations.

OUTREACH Max enables installers to overcome this network limitation. Simply connecting an OUTREACH Max in line with the network cable instantly doubles the range from 100 to 200 metres (656 ft).

## Simple to install

Fitting OUTREACH Max is simple because no set-up is required. Its only connections are two RJ45 network ports, both of which immediately self-configure for 10 or 100BASE-T operation. POE power is automatically transferred between connected equipment. No local power supply connection is needed, because OUTREACH Max is powered by POE.

OUTREACH Max can easily be located anywhere along the network cable, as long as no single length of cable is greater than 100 metres. For example, to extend the network connection between a POE switch and an IP camera to 170 metres, an OUTREACH Max could be installed 90 metres from the

switch. A further 80 metres of cable would run from the OUTREACH Max to the camera.

## Max POE power

OUTREACH Max enables network range extension to all POE devices that are compatible with IEEE 802.3af, which is the universal POE standard for low power network devices such as fixed IP cameras.

In addition, OUTREACH Max is also compatible with high-power standards such as POE Plus (IEEE 802.3at), and even "4-pair" POE for devices of 60 watts or more.

Note that OUTREACH Max is designed for connection to POE-compatible equipment only. If POE power is not required, Veracity's OUTREACH Lite should be specified instead.

## Go further

If POE and network extension beyond 200 metres (656 ft) is required, more than one OUTREACH Max may be installed in series. For example, a 300 metre (984 ft) connection between a POE switch

and a 10 watt IP camera can be achieved by fitting two OUTREACH Max units at 100 metre intervals along the cable.

Or a 5 watt IP camera may be located up to 800 metres away, using seven OUTREACH Max units and Veracity's OUTSOURCE POE injector.

The maximum extension distance depends on how much power is required and which POE source is used. See the tables on the next page or read Veracity's "Long Range Ethernet Extension" white paper on our website.

## No restrictions

Because OUTREACH Max simply restores the network connection every 100 metres, the full (200Mbit/s) bandwidth of 100BASE-T Ethernet is maintained across the entire link. This maximises performance and transparency, with no risk of a reduced or unpredictable bandwidth, even at distances of several hundred metres.

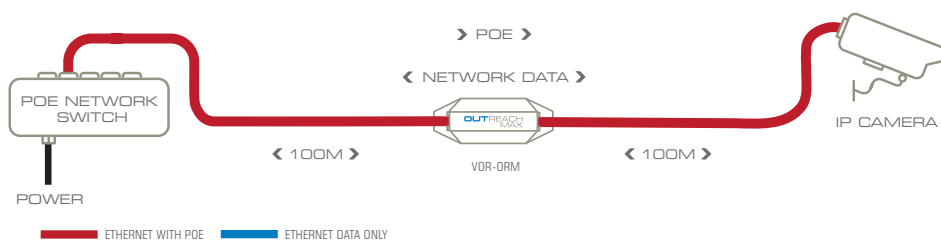


Diagram 1. A single OUTREACH Max doubles the cable range to a POE IP Camera. Each cable segment can be up to 100 metres.

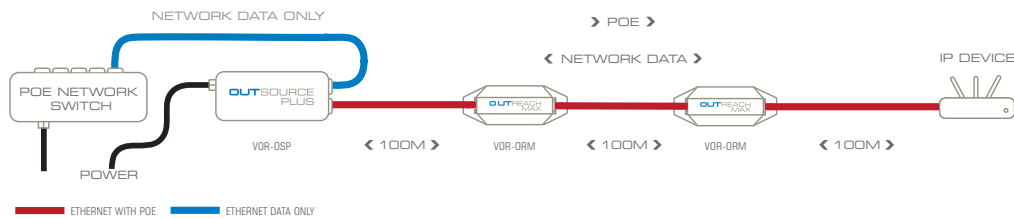


Diagram 2. Veracity's OUTSOURCE Plus provides enough power to allow 300 metres (984 ft) of extension to a POE Plus wireless access point, using two OUTREACH Max units located at 100 metre intervals.

## Which type of OUTREACH do I need?

Choosing between OUTREACH Max and OUTREACH Lite is straightforward:

**If only Ethernet extension is required, use OUTREACH Lite**

OUTREACH Lite extends Ethernet only and does not forward POE.

**If POE forwarding is also required, use OUTREACH Max**

OUTREACH Max supports all standards of POE forwarding, but does not support data-only extension.

For outdoor LAN extension, please see OUTREACH Max XT and OUTREACH Lite XT versions. For network extension to devices which are unknown or may change, please consider OUTREACH Quad versions.

## Maximum Extension Distance

By installing an OUTREACH Max for every extra 100 metres of cable, POE and Ethernet can be extended for considerable distances with no loss of network bandwidth. The limit depends on which POE Source is used and on how much power the IP camera or other device requires:

POE Source	POWER REQUIRED BY CAMERA				
	No POE	6W	12W	18W	25W
POE Switch	800m	400m	200m	-	-
OUTSOURCE	1150m	700m	400m	-	-
OUTSOURCE Plus	1150m	700m	500m	350m	200m

These are strict limits for installations using regular 24AWG Cat 5e cable. Distance is limited by the peak power required by the device; its POE "power class" is not used. Use of OUTSOURCE or OUTSOURCE Plus injectors is recommended for extension beyond 300 metres.

For example, installing a 5 watt IP camera 500 metres (1640 ft) from its power source would require four OUTREACH Max units and an OUTSOURCE injector. The table shows that OUTSOURCE can deliver 6 watts at 700 metres, so this is safely within the maximum range that is permitted.

"No POE" distances are for Ethernet extension only, and the last device in the chain must be an OUTREACH Lite. See the OUTREACH Lite datasheet for details, or consult Veracity's application notes for more in-depth information on long-range Ethernet extension.

# TECHNICAL SPECIFICATION

# OUTREACH™ MAX

POWER																			
Power consumption	1.3 watts via POE																		
FORWARDED POE POWER	Up to 70 watts depending on standard Maximum current 0.7 amps on data pairs Maximum current 1.5 amps on spare pairs																		
POE STANDARDS	IEEE 802.3af POE IEEE 802.3at POE Plus (2-event signature) Custom POE (incl. "always-on 48V" and "4-pair")																		
ETHERNET INTERFACE	Two independently auto-configuring 10/100 ports (10BASE-T/100BASE-TX, half/full duplex) Patch or crossover cables supported																		
LEDS																			
Status Indicators	Power good, network link/activity (both ports)																		
PHYSICAL/ENVIRONMENTAL																			
Dimensions	L105mm W 40mm H 22mm																		
Weight	45g [1.6 oz]																		
Mounting	Two 7mm diameter mounting holes. Centres 89mm apart																		
Operating temperature	-10°C to 50°C [14°F to 122°F]																		
Relative humidity	Up to 85%, non-condensing																		
Compliance	CE, FCC, RoHS																		
PRODUCT CODES	<table border="0"> <tr> <td>VOR-ORM</td> <td>OUTREACH Max</td> <td>Ethernet and POE extender</td> </tr> <tr> <td>VOR-ORL</td> <td>OUTREACH Lite</td> <td>Ethernet extender</td> </tr> <tr> <td>VOR-ORM-XT</td> <td>OUTREACH Max XT</td> <td>Outdoor Ethernet &amp; POE extender</td> </tr> <tr> <td>VOR-ORL-XT</td> <td>OUTREACH Lite XT</td> <td>Outdoor Ethernet extender</td> </tr> <tr> <td>VOR-OS</td> <td>OUTSOURCE</td> <td>POE injector</td> </tr> <tr> <td>VOR-OSP</td> <td>OUTSOURCE Plus</td> <td>POE Plus injector</td> </tr> </table>	VOR-ORM	OUTREACH Max	Ethernet and POE extender	VOR-ORL	OUTREACH Lite	Ethernet extender	VOR-ORM-XT	OUTREACH Max XT	Outdoor Ethernet & POE extender	VOR-ORL-XT	OUTREACH Lite XT	Outdoor Ethernet extender	VOR-OS	OUTSOURCE	POE injector	VOR-OSP	OUTSOURCE Plus	POE Plus injector
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