

UNIVERSAL ETHERNET &amp; POE EXTENDER

**OUTREACH<sup>®</sup>**  
**MAX**

Application | Extend Ethernet and POE to IP cameras in stairwells and fire escapes.

## Power over Ethernet and network range extender

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



- | Instantly doubles cable range to 200 metres
- | No local power is required
- | Full unrestricted network bandwidth
- | Universal 10/100 compatibility (Gigabit available)
- | Extends POE and POE Plus up to 90 watts
- | Integrated mounting holes



# OUTREACH Max easily 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 (328ft) to 200 metres (656ft).

Cable lengths in Ethernet networks are limited to 100 metres (328ft), 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 metres to 200 metres (656ft).

## 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 100Base-TX 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 compatible with POE Plus (IEEE 802.3at) and higher power 4-pair POE (IEEE 802.3bt) up to 90W.

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 (984ft) 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.

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. Gigabit versions are also available.

For longer Ethernet runs, Veracity recommends the LONGSPAN long distance point-to-point devices, which can achieve 100Base-TX connections with POE at up to 820m (2,690ft).

## No restrictions

Because OUTREACH Max simply restores the network connection every 100 metres, the full (100Mbps) bandwidth of 100Base-TX 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.

## OUTREACH MAX APPLICATION DIAGRAMS

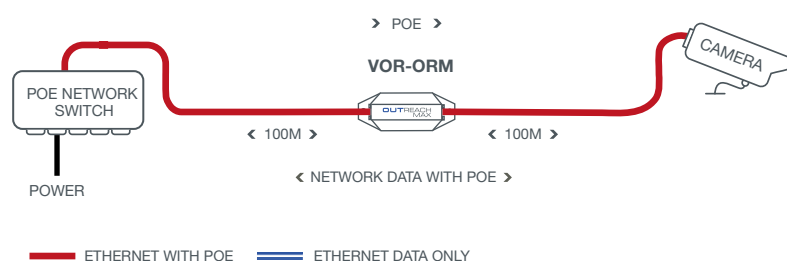


Diagram 1. A single OUTREACH Max doubles the cable range to a POE IP Camera. Each cable segment can be up to 100 metres.

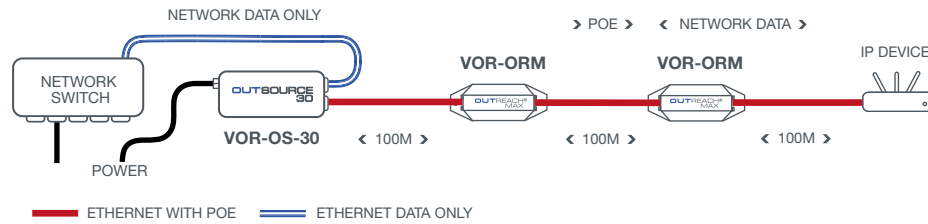


Diagram 2. Veracity's OUTSOURCE 30 provides enough power to allow 300 metres (984ft) of extension to a POE Plus wireless access point, using two OUTREACH Max devices located at 100 metre intervals.

## Which type of **OUTREACH** do I need?

Choosing between **OUTREACH** models is straightforward using the information below.

### ETHERNET ONLY

If Ethernet extension only is required, use **OUTREACH Lite** models. Lite models extend Ethernet only and do not forward POE.

### POE FORWARDING

If POE forwarding is also required, use **OUTREACH Max** models. Max models support all standards of POE forwarding.

### EXTERNAL UNITS

For outdoor Ethernet extension, use **OUTREACH XT** models with IP67/Nema 4X/6P standard enclosures and connections.

### GIGABIT OPTION

If Gigabit Ethernet extension is required, use **OUTREACH G** models as these support full Gigabit data rates.

EXTENSION TYPE	APPLICATION		NETWORK SPEED
	INDOOR	OUTDOOR	
Ethernet extension only	OUTREACH Lite	OUTREACH Lite XT	100Base-TX Ethernet
Ethernet extension with POE	OUTREACH Max	OUTREACH Max XT	
Ethernet extension only	OUTREACH Lite G	OUTREACH Lite GXT	Gigabit Ethernet
Ethernet extension with POE	OUTREACH Max G	OUTREACH Max GXT	

OUTREACH devices are ideal for Ethernet extension to 200m or 300m. The POE power source required will depend on the distance to the powered device (e.g. IP camera) and the power requirement of that device, as shown in this table.

POE SOURCE	MAXIMUM POE POWER	
	at 200m	at 300m
POE Switch (15W)	12W	9W
POE Switch (30W)	25W	20W
OUTSOURCE 30 (30W)	25W	20W
OUTSOURCE 90 (90W)	71W	43W

The power levels quoted above assume the use of high-quality Cat6 Ethernet cabling. Smaller gauges may result in higher losses and reduced power delivery.

Beyond 300m, it is possible to daisy-chain further OUTREACH devices to achieve distances up to 700m or beyond, but we recommend the use of Veracity's LONGSPAN long distance point-to-point solution for such applications. LONGSPAN can span up to 820m with full 100Base-TX data rates and 15W of POE delivery or 25W at 600m.

## TECHNICAL SPECIFICATION

OUTREACH<sup>®</sup>  
MAX

<b>POWER</b>		
Power consumption	1.3 watts via POE	
<b>POE POWER COMPATIBILITY</b>	90 watts max (full 802.3bt Class 8, 71 watts camera power) Maximum current 1.92 amps per pair at rated operating temperature	
<b>POE STANDARDS</b>	IEEE 802.3af POE (15W) and IEEE 802.3at at POE Plus (2-event signature) (25-30W) IEEE 802.3bt POE (to 90W+, non-LLDP) Custom POE (incl. “always-on 48V” and “4-pair” POE)	
<b>ETHERNET INTERFACE</b>	Two independently auto-configuring 10/100 ports (10Base-T/100Base-TX, half/full duplex) Patch or crossover cables supported	
<b>LEDs</b>		
Status indicators	Power good, network link/activity (both ports)	
<b>PHYSICAL/ENVIRONMENTAL</b>		
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, UKCA, UL, RoHS	
<b>PRODUCT CODES</b>		
<b>VOR-ORM</b>	<b>OUTREACH Max</b>	<b>Ethernet and POE extender</b>
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-ORM-G	OUTREACH Max G	Gigabit Ethernet and POE extender
VOR-ORL-G	OUTREACH Lite G	Gigabit Ethernet extender
VOR-ORM-GXT	OUTREACH Max GXT	Outdoor Gigabit Ethernet and POE extender
VOR-ORL-GXT	OUTREACH Lite GXT	Outdoor Gigabit Ethernet extender
VOR-OS-30	OUTSOURCE 30	30W POE injector with UK, EU or US power cable
VOR-OS-90	OUTSOURCE 90	90W POE injector with UK, EU or US power cable



OUTREACH is also available for extending Ethernet to non POE devices. See datasheet for OUTREACH Lite.

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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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