



# PoE Injector Installation Summary

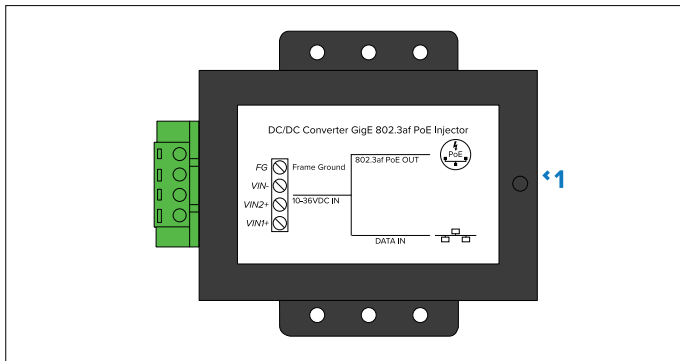
## Applicable products

This document is applicable to the following products:

Product	Part number
PoE Injector (2nd Generation; 5 Gbit)	A80811

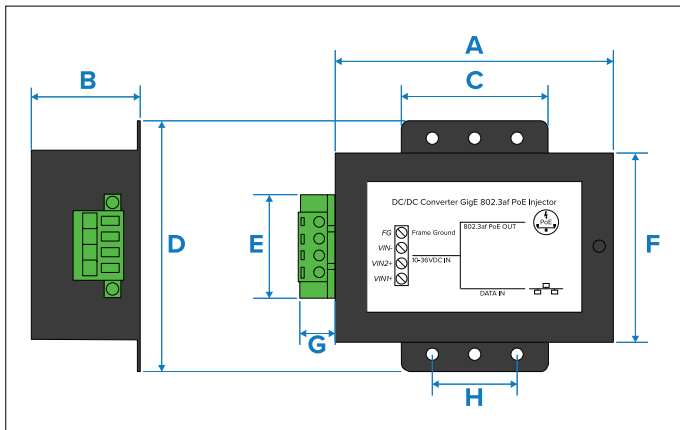
## Parts supplied

The following parts are supplied with your product:



Description
1 PoE Injector (2nd Generation; 5 Gbit).

## Product dimensions



Description	Description
A 82.00 mm (3.23 in)	B 32.80 mm (1.29 in)
C 43.00 mm (1.69 in)	D 74.00 mm (2.91 in)
E 30.00 mm (1.18 in)	F 56.00 mm (2.20 in)
G 11.00 mm (0.43 in)	H 25.00 mm (0.98 in)

## General location requirements

When selecting a location for your product it is important to consider a number of factors.

Factors for consideration:

- **Ventilation** — To ensure adequate airflow:

- Ensure that product is mounted in a compartment of suitable size.
- Ensure that ventilation holes are not obstructed. Allow adequate separation of all equipment.

- **Mounting surface** — Ensure product is adequately supported on a secure surface. Do not mount units or cut holes in places which may damage the structure of the vessel.
- **Cabling** — Ensure the product is mounted in a location which allows proper routing, support and connection of cables:

- Minimum bend radius of 80 mm (3.15 in.) unless otherwise stated.

- Use cable clips to prevent stress on connectors.

- If your installation requires multiple ferrites to be added to a cable then additional cable clips should be used to ensure the extra weight of the cable is supported.

- **Water ingress** — The product is NOT protected against the ingress of moisture or liquids. The product should be located in a protected area away from moisture and exposure to rain and salt spray.

- **Electrical interference and noise** — Select a location that is far enough away from devices that may cause interference, such as motors, generators and radio transmitters / receivers. Avoid the use of sub-standard sources of electrical power which may generate ripple or radiated noise, such as poor quality DC regulators or converters.

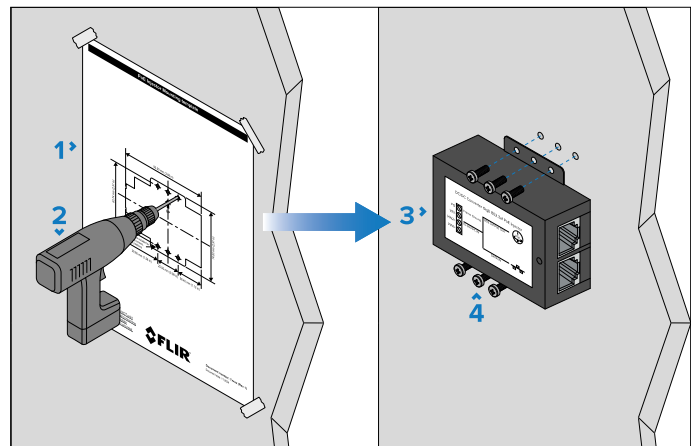
- **Power supply** — Select a location that is as close as possible to the vessel's DC power source. This will help to keep cable runs to a minimum.

## Mounting the unit

Instructions for mounting the unit.

Before mounting the product, ensure that you have:

- Selected a suitable location, based on the location requirements found in this document.
- Identified the relevant cable connections and the route that the cables will take.



1. Secure the mounting template in the required location using adhesive tape.
2. Drill 6 holes at the marked location on the template, and then remove the mounting template.

- Align the unit's fixing holes with the drilled holes on the mounting surface.
- Insert the fixings and fully tighten until secure.

**Note:**

Drill bit, tap size and tightening torque are dependent on the thickness and type of material the unit is to be mounted on.

## Power over Ethernet (PoE)

Power over Ethernet (PoE) is a system which allows both power and data to be passed along a single CAT 6 Ethernet cable.

There are 2 main types of PoE device:

- Power Sourcing Equipment (PSE)** — this PoE system component provides electrical power over a CAT 6 Ethernet cable.
- Powered Device (PD)** — this PoE system component is powered by the electrical power provided by the Power Sourcing Equipment (PSE).

The PoE Injector (2nd Generation; 5 Gbit) is a PSE (Power Sourcing Equipment) device, which can supply both data and power to a single connected Powered Device (PD). The Powered Device (PD) can be PoE Class 0 to 3, and may draw a maximum of 15.4 W power.

Before connecting a Powered Device (PD) to the PoE Injector, ensure that the maximum power output of the PoE Injector (2nd Generation; 5 Gbit) (i.e. 15.4 W) will not be surpassed.

The following table lists the different classes of Powered Device (PD) supported by the PoE Injector (2nd Generation; 5 Gbit), and their typical power consumption:

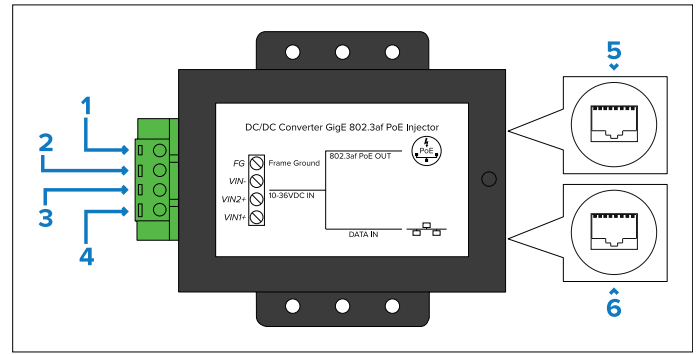
PoE Class	Maximum power provided by Power Sourcing Equipment (PSE)	Typical power required by Powered Device (PD) <sup>(1)</sup>
<b>Class 1</b> (Very low power consumption)	4 W	~3.84 W
<b>Class 2</b> (Low power consumption)	7 W	~6.49 W
<b>Class 3</b> (Medium power consumption)	15.4 W	~12.95 W

**Note:**

<sup>(1)</sup> The power consumption figures provided in the third column in the table above are **approximate** figures only. The actual power consumption figures may differ, depending on the device.

## Connections overview

The PoE Injector (2nd Generation; 5 Gbit) includes the following connections:

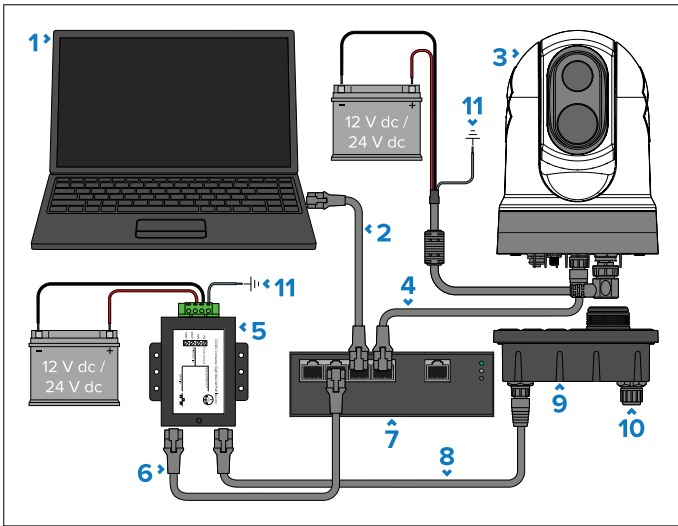


Connector	Suitable connections
<b>1</b> FG (Frame / chassis Ground)	<ul style="list-style-type: none"> <li>Vessel's common RF ground (if available); or:</li> <li>12 / 24 V dc power supply's <b>negative</b> terminal.</li> </ul>
<b>2</b> VIN-	<ul style="list-style-type: none"> <li>12 / 24 V dc power supply's <b>negative</b> terminal.</li> </ul>
<b>3</b> VIN2+	<ul style="list-style-type: none"> <li>12 / 24 V dc power supply's <b>positive</b> terminal.</li> </ul>
<b>4</b> VIN1+	<p style="background-color: #ff0000; color: white; padding: 2px;"><b>Important:</b></p> <p>Do NOT use this connection.</p>
<b>5</b> PoE (Power over Ethernet) <b>OUT</b>	RJ45 connection, providing power <b>and</b> data to Powered Devices (PD) with an RJ45 or RayNet connector.
<b>6</b> Ethernet Data <b>IN</b>	Ethernet data input via an RJ45 connection, from an Ethernet device with an RJ45 or RayNet connector. (For connecting devices with a RayNet connector, a RayNet to RJ45 adapter cable is required, available separately.)

## System overview

The PoE Injector (2nd Generation; 5 Gbit) is a compact device capable of acting as Power Sourcing Equipment (PSE) for a PoE Powered Device (PD) in systems which do not already include a source of PoE from other Power Sourcing Equipment (PSE) (such as network switches or displays providing PoE). The PoE Injector consumes power from a 12 / 24 V dc source, and Ethernet data via a separate RJ45 connection, and then combines and transmits both the power and data signals on a separate, single RJ45 connection, via a CAT 6 Ethernet cable.

The following illustration shows a very **typical** installation scenario. For more system configuration examples, ranging from small to large systems, refer to the documentation supplied with your PoE device.



### Important:

Do NOT connect the power input labelled “VIN1+” on the PoE Injector.

### Note:

For relevant power connection information, refer to the instructions which accompany each device.

### Description

- 1 Laptop (or other Ethernet-connected device running a web browser).
- 2 RJ45 to RJ45 Ethernet cable.
- 3 Compatible camera (M300-Series shown).
- 4 RayNet (Ethernet) to RJ45 adapter cable.
- 5 PoE Injector (2nd Generation; 5 Gbit), acting as the Power Sourcing Equipment (PSE) for the PoE Powered Device (PD) in this system.
- 6 RJ45 to RJ45 Ethernet cable.
- 7 Non-PoE network switch.
- 8 RayNet (Ethernet) to RJ45 adapter cable.
- 9 Example PoE Powered Device (PD): Joystick Control Unit keypad (JCU-3 shown).
- 10 Generally, PoE Powered Devices (PD) only require one power connection — either PoE, or a separate self-powered (“alternate”) connection to a separate power supply. For these Powered Devices (PD), it is important to ensure that they are using only one of the available power connections (not both). For more information, refer to the instructions provided with the PoE Powered Device (PD).
- 11 FG (Frame / chassis Ground) for the PoE Injector — connect to vessel’s common RF ground (if available), or the battery’s negative terminal.

## Physical specification

### Specification

**Length:** 93.00 mm (3.66 in).

**Height:** 74.00 mm (2.91 in).

### Specification

**Depth:** 32.80 mm (1.29 in).

**Weight:** 200.00 g (0.44 lbs).

## Power specification

### Specification

**Nominal supply voltage:** 12 V or 24 V dc

**Operating voltage range:** 10 V to 36 V dc

**PoE power output:**

- **Class 1:** 4 W
- **Class 2:** 7 W
- **Class 3:** 15.4 W

Ensure that the maximum power output is not exceeded. For more information, refer to: [Power over Ethernet \(PoE\) \(p. 2\)](#)

**Maximum power output:** 15.4 W

**Current draw:**

- 2.34 A @ 10 V dc
- 0.65 A @ 36 V dc

**Power consumption:**

- 23.4 W @ 10 V dc
- 23.4 W @ 36 V dc

**PoE nominal output voltage range:** 44 V to 57 V dc (based on the *IEEE 802.3af* standard).

## Network specification

### Specification

**Network connection ports:**

- 1x RJ45 data **input** port (1000 / 5000 Mbits/s)
- 1x PoE RJ45 combined power **and** data **output** port (1000 / 5000 Mbits/s). (Supports PoE classes 0 to 3, with 15.4 W maximum power consumption, based on the *IEEE 802.3af* standard.)

**IEEE Standard:** Conforms to IEEE 802.3af

## Environmental specification

### Specification

**Operating temperature:** -40 °C (-40 °F) to +40 °C (104 °F)

**Storage temperature:** -40 °C (-40 °F) to +85 °C (185 °F)

**Relative humidity:** up to 90%

## Conformance specification

### Specification

**Standards:**

- EN 60945:2002 (Europe, Australia, New Zealand)
- FCC Class B
- IEEE 802.3af